

PUMA ENERGY CARIBE, LLC

July 18, 2017

Delivered via Hand delivered

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Subject:

Comments to the December 2016 Semi- Annual RCRA Report for the former CAPECO site facility in Bayamon Puerto Rico.

Dear Mr. Cuevas:

Puma Energy Caribe LLC is pleased to submit the Revised Semi Annual RCRA groundwater sampling report of the 76 monitoring wells located at our Bayamon Facility.

This submittal is in accordance with the comments from USEPA dated May 5, 2017.

Please feel free to contact me at 787.705.7929 or 787.600.5943 should you have any question or require additional information regarding this document.

Sincerely,

PUMA Energy Caribe, LLC

Brenda Toraño Díaz, PE

EHS Manager Enclosures

Comment from Environmental Quality Board	Completed Date and Addressed
 a. There are discrepancies on the water level data for some of the monitoring wells between Table 1 and the field data sheets of the corresponding wells. The discrepancies are presented in the table below. Please correct accordingly. 	Values in Table 1 corrected according to field forms. No other information was found indicating values were different than the ones in the field forms.
b. There are some discrepancies regarding the sampling date between table 1 and the respective field data sheet for wells presented in the table below. Please transcribe accordingly for future reports.	Values in Table 1 corrected according to field forms. No other information was found indicating values were different than the ones in the field forms.
Table 2: Please refer to the comment on the previous (June 2016) sampling event report review regarding the quantitation limit being above the RSL or MCL for some of the contaminants, it is indispensable that the laboratory quantitation limits need to be below RSL/MCL.	Pace Analytical Labs, has meet in many times with the PREQB and have explained that is not possible reach the requested levels (we have included the letter that the Lab sent PREQB. Appendix F) but we will make note and follow up with the laboratory.
All of the field data sheets present no data for the parameters on the first row of recorded depth. For future events please provide an explanation for any inconsistencies during field activities on the remarks section of the field sheet.	Note Taken for future events. Take note that the first line of the field data sheets indicates it is the initial reading of water level in which no water volume has been collected. See Item 6 of Section VI: Procedure, of the SOP: Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells
Again, some of the field data sheets indicate that the bailer method was used instead of the low flow method, which increased turbidity (>50 NTU) in various wells. As mentioned in the previous sampling event report review, the bailer method tends to increase turbidity, which may misrepresent contaminant levels. Please clarify the rationale for using the bailer method, we recommend the sole use of the low flow method in order to better represent contaminant levels in samples.	Note taken for future events. MW-83B2 had a considerable column, and a whaler pump was used to purge it. It was switched to bailer to sample. For MW-P121 and MW-P124, peristaltic pump or whaler are not powerful enough to lift the water that was approximately at 33.40 and 32.80 ft.
Some of samples exceeded the EPA method holding time, for example wells MW-57A, MW-AD01 and MW-AD03, while in other cases there was no sufficient sample for running a spiked sample. Please correct accordingly and/or provide an explanation for these types of inconsistencies.	These sample were shipped via FEDEX on December 20, 2016 weather conditions delayed the delivery to avoid we have moved the sampling to November



Puma Energy Caribe, LLC

SEMIANNUAL SAMPLING REPORT DECEMBER 2016

Former Caribbean Petroleum Corporation Refinery/Terminal – Bayamón, Puerto Rico

April 2017

Revised: July 14, 2017

E A

Efraín Calderón, Jr

Operation Manager Environmental

SEMIANNUAL SAMPLING REPORT -DECEMBER 2016

Former CAPECO Refinery/Terminal Bayamón, Puerto Rico

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B0063767

Date:

April 4, 2017

July 14, 2017 Revised

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VERSION CONTROL, OPTIONAL

Issue	Revision No	Date Issued	Page No	Description	Reviewed by

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ACRONYMS AND ABBREVIATIONS

Arcadis Caribe, PSC

bgs below ground surface

amsl above mean sea level

CAPECO Caribbean Petroleum Corporation

DRO diesel range organics

GRO gasoline range organics

HASP health and safety plan

ORO oil range organics

PREQB Puerto Rico Environmental Quality Board

Puma Energy Caribe, LLC

QA/QC quality assurance/quality control

RCRA Resource Conservation and Recovery Act

RFI Resource Conservation and Recovery Act Facility Investigation

SOP standard operation procedures

SWMU solid waste management unit

TPH total petroleum hydrocarbons

USEPA United States Environmental Protection Agency

WWTP wastewater treatment plant

EXECUTIVE SUMMARY

Arcadis Caribe, PSC prepared this Bi-annual Groundwater Sampling Report for the December 2016 groundwater sampling event on behalf of Puma Energy Caribe, LLC (Puma) to satisfy the activities stipulated in the Agreement with the New Purchaser (Agreement) dated 2011 (Docket Num. RCRA-02-2011-7305) between Puma and the United States Environmental Protection Agency (USEPA). This Agreement served as a modification to the 1995 Administrative Order on Consent, Docket Num. II RCRA-95-3008(h)-0303 that was in place prior to the May 2011 purchase by Puma.

On November 2015, USEPA concurred with Puma's recommendation to implement a periodic groundwater sampling consisting of a semiannual event monitoring 73 wells; beginning on 2016 and annually for three years thereafter.

This report provides a summary of the groundwater sampling field activities performed and the results of the first semiannual sampling event from December 2016 thru January 2017. Additionally, a summary of general results is presented for the monitoring well samples collected in which analytical data revealed detected concentrations for several Total Petroleum Hydrocarbons, Volatile Organic Compounds, Metals and Semi-Volatile Organic Compounds throughout the facility operations area and undeveloped wetland area.

1 INTRODUCTION

Site Description

Puma Energy Caribe, LLC (Facility) is located at Road PR-28, Km. 2, Luchetti Industrial Park in Bayamón, Puerto Rico; approximately 3 miles to the south of the Atlantic Ocean coast. The land use on adjacent properties is primarily commercial or industrial. Commercial and industrial properties border the Facility to the south and west; the U.S. Army facility Fort Buchanan is to the east; and Highway PR-22 to the north.

The entire Facility encompasses approximately 179 acres, of which 115 acres are developed as a petroleum products storage facility, including operational buildings, administrative offices, parking areas, and a wastewater treatment plant to the north. The Facility has an aboveground pipeline for the transfer of fuel from loading docks on San Juan Bay and to customers at the Luis Muñoz Marín International Airport. Liquid propane gas storage and a distribution area was recently incorporated to the activities of the Facility. The remainder of the property is undeveloped, and includes an undeveloped wetland area and Las Lajas Creek to the north of the operations area. Figure 1 shows the general location and topography of the Facility and surrounding areas.

Purpose

When the Facility was acquired by Puma in May 2011, Puma assumed the responsibility of executing Corrective Action activities required under Resource Conservation Recovery Act (RCRA) Agreement. The required activities were stipulated in the Agreement with the New Purchaser dated 2011 (Docket Num. RCRA-02-2011-7305) between Puma and the USEPA, which served as a modification to the 1995 Administrative Order on Consent (Order), Docket Num. II RCRA-95-3008(h)-0303 that was in place prior to the May 2011 purchase by Puma.

On November 2015, USEPA concurred with Puma's recommendation to implement a periodic groundwater sampling consisting of a semiannual sampling event for the first year, beginning 2016 and annually for three years thereafter.

Arcadis prepared this report on behalf of Puma for the Facility.

This report provides a summary of the groundwater sampling field activities performed and the results of the first semiannual sampling event from December 2016 thru January 2017. Additionally, a summary of general results is presented for the 70 out of 73 groundwater samples collected in which analytical data revealed detected concentrations for several Total Petroleum Hydrocarbons, Volatile Organic Compounds, Metals and Semi-Volatile Organic Compounds throughout the facility operations area and undeveloped wetland area.

2 HYDROGEOLOGY

The Facility is located on alluvium deposits (Qa), consisting of sand, clay, and sandy clay based on the USGS Geologic Map of the Bayamón Quadrangle (Monroe 1973).

2.1 Water Bearing Zones

Two general hydrogeologic units have been described at the Facility (Geraghty and Miller, Inc. 1989). The uppermost clay unit (Zone A) contains a low permeability semi-perched layer and a permeable carbonate water-bearing zone. The general horizontal groundwater flow direction in Zone A is to the north, although localized mounds and depressions reportedly occur in the central portion of the Facility.

The underlying carbonate sediment layer also contains a water-bearing zone (Zone B). Groundwater flow in Zone B is generally in the north to northwest direction. The potentiometric surface of groundwater for wells completed in the carbonate sediment layer is generally higher than water level elevations measured in Zone A (i.e., the water table wells). The groundwater gradient is generally towards the north; see Figures 4 and 5.

3 DECEMBER 2016 GROUNDWATER SAMPLING EVENT

3.1 Groundwater Sampling Procedures

Groundwater sampling included, purging and sampling to collect a representative sample from each well purged by removing three times their volume to be sampled with a disposable and dedicated bailer or using the low flow procedure after attaining stabilization of indicator parameters. Prior to sampling activities, a round of groundwater levels was documented by field personnel.

Personnel used dedicated and disposable nitrile gloves. The staff changed gloves between samples to avoid cross contamination. The standard operating procedures followed during groundwater sampling activities are provided in **Appendix A**. Personnel labeled the samples, and placed them inside an ice-filled cooler for shipment to Pace Analytical Laboratory.

Field activities at the Facility started in December 19, 2016 and ended in January 19, 2017. A total of 70 of 73 groundwater monitoring wells were sampled in this period (Figure 2). Each groundwater sample was collected from the existing monitoring wells located through the Facility including two additional wells, recently installed in June 2016 as required by USEPA as part of the RCRA RFI Supplemental Sampling at the wastewater treatment plant area. The distribution of the wells is throughout the Facility operations area and Undeveloped Wetland Area. Samples were collected following the Arcadis Standard Operating Procedures (Appendix A) and were identified using the well identification number. See Figure 2 for monitoring well identification numbers and locations. Field notes by Arcadis personnel are available in Appendix B, a photolog of the sampling activities is included in Appendix C. Arcadis' personnel performed the sampling event during the month of December 2016 and January 2017.

Static water levels and product thickness were measured in monitoring wells with an ORS oil/water interface probe. This instrument employs two-wire electrodes, and is marked every 0.01 feet (ft).

3.1.1 Groundwater Sampling

The sampled wells are listed in **Table 1**. Collected samples were analyzed by Pace Analytical Laboratory for total petroleum hydrocarbons: gasoline range organics (GRO), diesel range organics (DRO), and oil range organics (ORO) by the USEPA's Method 8015M and 8021; Volatile Organic Compounds by USEPA's Method 8260; Metals by USEPA's Method 6010, Mercury by USEPA's Method 7470; Semi-Volatile Organic Compounds by USEPA's Method 8270. Laboratory reports can be found in **Appendix D**.

A low flow peristaltic purging/sampling pump was used to sample wells. The tubing used was a combination of Tygon and Teflon 3/16 ID. Tubing was replaced for each well to avoid cross contamination. The pump intake was placed approximately 1 foot below the water table. In wells that had a screen length that was entirely submerged, the pump intake was placed approximately 1 foot below the top of the screen. To ensure well samples were representative of the formation, 3 to 4 well casing volumes were purged from each well before sampling, or stabilization of field measurements.

Ground water samples were collected in laboratory-supplied containers; labeled and stored in coolers with ice in double-zip locked bags. The samples were relinquished to CPC at the end of each sampling

day. Chain-of-Custody Forms were filled out every sampling day. Copies of Chain-of-Custody Forms are included in **Appendix D**.

3.2 Field Measurements

During well purging, field measurements for pH, Temperature (C^O), Dissolved Oxygen (mg/L – milligrams per liter), Oxygen-Reduction Potential (ORP), Specific Conductivity (µmhos/cm, millisiemens/cm) were taken at approximately every ¼ well volume. The measurements from purged groundwater were taken from the pump discharge. Electronic water quality measuring devices were utilized for this activity. Table 1 presents measurements of water level, and presence / thickness of floating product, if any.

Water and product thickness were measured using an ORS Water/Oil interphase probe and were recorded in the field Groundwater monitoring sheets included in **Appendix B.** Copies of Field Calibration Logs are included in **Appendix E**.

3.3 Decontamination

Except for the ORS and the water quality meters, all equipment was dedicated for each well. Therefore, minimal decontamination was required. Decontamination consisted of a rinse with D.I. water followed by a laboratory grade (micro) detergent and a final rinse with D.I. water. This was also done to the dedicated tubing before it was discarded.

All decontamination and purged water was left on-site to be treated at the Wastewater Treatment Plant.

4 RESULTS

4.1 Groundwater Elevations

Prior to sampling ground-water level and LNAPL measurements obtained from 73 monitoring wells during the months of June to August, show groundwater elevations ranging from 1.6 to 30.3 ft. amsl. The lowest groundwater elevations were obtained at the undeveloped wetland area wells ranging from 1.6 to 7.7 ft. amsl, while at the Facility operations area ranged from 4.4 to 30.3 ft. amsl, being the highest groundwater elevations located at the southern perimeter. The general groundwater flow direction is determined to be towards the north. See Figures 3 and 4 for contour maps and flow directions.

4.2 Groundwater Analytical Results Summary

Groundwater analytical results obtained from the laboratory reports are presented in Table 2 and Figure 6. The analytical results are compared to the USEPA May 2016 Tap water Regional Screening Levels (Tap water RSLs) and Maximum Contaminant Levels (MCLs), obtained from the May 2016 RSL Summary Table (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016), and the USEPA May 2016 Commercial Vapor Intrusion Screening Levels (Commercial VISLs), obtained from the VISL Calculator (https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visls). Tap water RSLs and Commercial VISLs were calculated assuming either a target hazard quotient of 0.1 or target cancer risk of 1x10-6.

The Facility receives potable water and sanitary sewerage services from the Puerto Rico Aqueduct and Sewer Authority (PRASA). Furthermore, there are no known downgradient wells used for public or private drinking water supply within 2 miles of the site. As such, the comparison of groundwater analytical results to potable water screening levels and MCLs is conservative, and does not indicate a potential for risk to human health on-site. Similarly, there are a limited number of occupied buildings on-site. None of the analytical results that are greater than the Commercial VISLs were reported at wells within 100 feet of occupied buildings.

Analytical results for 15 analytes in 37 samples collected from monitoring wells in the Facility Operations Area are greater than one or more of the corresponding screening levels; see **Figure 5**. Below, are the results, summarized by monitoring well:

- AD-1
 - Total arsenic was detected at a concentration greater than the Tap water RSL and the MCL.
 Naphthalene was detected at a concentration greater than the Tap water RSL.
- AD-4
 - Naphthalene was detected at a concentration greater than the Tap water RSL.
- B-9
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

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DP1

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.

EB-101

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL.

EB-103

MTBE was detected at a concentration greater than the Tap water RSL.

EB-104

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. MTBE was detected at a concentration greater than the Tap water RSL.

EB-105

Total arsenic was detected at a concentration greater than the Tap water RSL and MCL.

EB-106

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-MP2

Total vanadium was detected at a concentration greater than the Tap water RSL.

MW-MP3

Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total lead was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.

• MW-MP4

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MP-5A

Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Trichloroethene was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-MP8

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

• MW-16C

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.
 Trichloroethene was detected at a concentration greater than the Tap water RSL but less than the MCL.

MW-20B

 Total arsenic and total mercury were detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-21B

Total vanadium was detected at a concentration greater than the Tap water RSL.

MW-33A

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL.

MW-48B

Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total lead was detected at a concentration greater than the Tap water RSL and MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.

MW-57A

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL.

MW-65A

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-83A

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-83B2

Trichloroethene was detected at a concentration greater than the Tap water RSL, MCL, and Commercial VISL. However, no buildings are located within 100 feet of this VISL exceedance.

MW-88A

Naphthalene was detected at a concentration greater than the Tap water RSL.

MW-75B

 Total mercury was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-76B2

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o Benzo(a)anthracene was detected at a concentration greater than the Tap water RSL.

MW-77B

 Total arsenic was detected at a concentration greater than the Tap water RSL but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.

MW-78B

 Vinyl chloride was detected at a concentration greater than the Tap water RSL, but less than the MCI

MW-86A

 Total arsenic was detected at a concentration greater than the Tap water RSL but less than the MCL.

MW-91A

Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL and Commercial VISL. Benzene and ethylbenzene were detected at a concentration greater than the Tap water RSL, MCL, and Commercial VISL. o-Xylene and m&p-xylenes were detected at a concentration greater than the Tap water RSL but less than the MCL. No occupied buildings are located within 100 feet of this well.

MW-98A

Napthalene was detected at a concentration greater than the Tap water RSL.

MW-B1

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.

PMW-116

 Total arsenic was detected at a concentration greater than the Tap water RSL but less than the MCL.

PMW-118

Total mercury was detected at a concentration greater than the Tap water RSL, but less than the MCL. Chloroform and cis-1,2-dichloroethene were detected at a concentration greater than the Tap water RSL, but less than the MCL. Trichloroethene was detected at a concentration greater than the Tap water RSL, MCL, and Commercial VISL. However, no buildings are located within 100 feet of this well.

PMW-119

 Trichloroethene was detected at a concentration greater than the Tap water RSL and Commercial VISL, but less than the MCL. No buildings are located within 100 feet of this well.

PMW-121

Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total lead was detected at a concentration greater than the Tap water RSL and MCL. Total mercury was detected at a concentration greater than the Tap water RSL and equal to the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL. Trichloroethene was detected at a concentration greater than the Tap water RSL and Commercial VISL, but less than the MCL. However, no buildings are located within 100 feet of this VISL exceedance.

PMW-124

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total mercury was detected at a concentration greater than the Tap water RSL and MCL.
 Total vanadium was detected at a concentration greater than the Tap water RSL.

Analytical results for 10 analytes in 11 samples collected from monitoring wells in the Undeveloped Wetland Area are greater than one or more of the corresponding screening levels. These results are summarized below by monitoring well:

MW-114A

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-13A

Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL. Benzene and ethylbenzene were detected at concentrations greater than the Tap water RSL, but less than the MCL. MTBE was detected at a concentration greater than the Tap water RSL.

MW-13B2

Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-15A

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

• MW-15B

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-15B2

Total arsenic was detected at a concentration greater than the Tap water RSL and the MCL.

• MW-17B

Total vanadium was detected at a concentration greater than the Tap water RSL. 1,2-Dibromo-3-chloropropane was detected at a concentration greater than the Tap water RSL, MCL, and

Commercial VISL. However, this well is located within the Undeveloped Wetland Area, and therefore, no buildings are located within 100 feet of this well.

MW-37A

Total arsenic and mercury were detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL and Commercial VISL. Benzene was detected at a concentration greater than the Tap water RSL, MCL, and Commercial VISL. Ethylbenzene was detected at a concentration greater than the Tap water RSL and Commercial VISL, but less than the MCL. m&p-Xylenes were detected at a concentration greater than the Tap water RSL, but less than the MCL. No buildings are located within 100 feet of this well.

MW-38A

 Chloroform was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-84A

Total arsenic was detected at a concentration greater than the Tap water RSL and the MCL.

MW-84B2

Total arsenic was detected at a concentration greater than the Tap water RSL and MCL. Total mercury was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.

MW-110AB

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.

MW-110B2

Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

MW-111A

Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

Analytical results for 3 analytes in 2 samples collected from monitoring wells in the WWTP Area are greater than one or more of the corresponding screening levels. These results are summarized below by monitoring well:

WWTP-1

 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL.

WWTP-2

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 Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.

Table 3 presents the analytical results for the samples duplicates. Other Quality Assurance and Quality Control (QA/QC) samples results are included in **Appendix D**.

The results of this second Semiannual event confirmed that no LNAPL has extended beyond the site boundaries. However, during the second semiannual event of 2016 free phase product was detected in four (4) wells out of seventy-three (73) monitoring wells: two wells in the tank farm area, one in avenue D and one well in the former WWTP. Nevertheless, comparison of 2009, 2011, 2014 and 2016 free phase product data revealed a decline in thickness in wells and it appears to be confined to the well immediate area.

TABLES



Table 1. Sampled W	GII9			
Water Levels and LNA	NPL Thickness			
Monitoring Well	Sample Date	Product Level (Feet BLS)	Water Level (feet BLS)	Product Thickness (inches)
MW-42B	1/19/2017	23.69	23.80	0.11
MW-40B	1/19/2017	12.28	13.69	1.41
MW-91A	12/27/2016		7.53	
MW-18D	12/27/2016		10.80	
MW-87A	12/27/2016		6.36	
MW-88A	12/27/2016		5.90	
MW-99A	12/27/2016		10.43	
MW-98A	12/27/2016		4.93	
MW-T9	12/27/2016	4.38	4.60	0.22
MW-30A	1/5/2017		6.02	
MW-48B	12/20/2016		5.76	
MW-P 119	12/20/2016		11.15	
MW-P118	12/21/2016		6.52	
MW-83B2	12/20/20116		5.55	
MW-83A	1/17/2017		3.86	
MW-75B2	1/18/2017		2.00	
MW-114A	121/20/2017		2.95	
MW-AD2	12/20/2016	4.34	4.35	0.01
MW-AD1	12/20/2016		3.62	
ЛW-57A	12/20/2016		2.92	
MW-AD3	12/20/2016		3.94	
MW-AD4	12/21/2016		6.28	
ЛW-33A	12/21/2016		5.80	
MW-P116	12/21/2016		3.58	
MW-P117	12/21/2016		3.38	
MW-65A	12/21/2016		3.14	
MW-15A	12/22/2016		1.84	
MW-15B2	12/22/2016		6.05	
	·			

6.38

MW-15B

12/22/2016



Table 1. Sampled W	ells			
Water Levels and LNA	PL Thickness			
Monitoring Well	Sample Date	Product Level (Feet BLS)	Water Level (feet BLS)	Product Thickness (inches)
MW-86A	12/29/2016		4.30	
MW-MP8	1/4/2017		6.37	
MW-MP9	1/4/2017		3.87	
MW-MP4	1/4/2017		6.25	
MW-MP3	1/4/2017		3.66	
MW-MP2	1/4/2017		3.73	
MW-DP1	12/29/2016		2.11	
MW-MP5A	12/29/2016		4.87	
MW-DP5	1/3/2017		2.87	
MW-EB107	1/3/2017		4.67	
MW-EB108	1/3/2017		5.68	
MW-EB103	1/3/2017		6.96	
MW-EB104	1/3/2017		7.72	
MW-EB105	1/3/2017		7.80	
MW-EB106	1/3/2017		8.23	
MW-EB102	12/28/2016		7.28	
MW-EB101	12/28/2016		3.92	
MW-B9	1/3/2017		2.20	
MW-B1	12/28/2016		1.50	
MW-P120	12/19/2016		13.20	
MW-P122	12/19/2016		14.83	
MW-P123	12/19/2016		8.70	
MW-P124	12/19/2016		32.83	
MW-P121	12/19/2016		33.40	
MW-16C	12/28/2016		6.25	
MW-109A	1/5/2017		9.80	
MW-76A	1/12/2017		8.45	
MW-76B2	1/12/2017		5.93	
MW-17B	1/18/2017		4.22	



Table 1. Sampled Wells

Water Levels and LNAPL Thickness

Monitoring Well	Sample Date	Product Level (Feet BLS)	Water Level (feet BLS)	Product Thickness (inches)
MW-78B	1/17/2017		7.10	
MW-37A	1/12/2017		6.65	
MW-13B2	1/12/2017		12.84	
MW-13A	1/12/2017		6.93	
MW-110B2	1/17/2017		6.02	
MW-110AB	1/17/2017		7.42	
MW-111A	1/17/2017		9.30	
MW-63A	1/18/2017		2.97	
MW-38A	1/18/2017		4.45	
MW-84A	1/18/2017		5.03	
MW-84B2	1/18/2017		2.52	
MW-77B	1/19/2017		6.80	
MW-20B	1/19/2017		9.25	
MW-21B	1/19/2017		11.80	
WWTP-1	12/28/2016		5.92	
WWTP-2	12/28/2016		6.53	



					Location:	AD-1	AD-3	AD-4	B-0	DP-1	DP5 -	FR-101-	FR-102	FR-102	FR-104	FR-105	FR-106	FR-107	FR-109	MP2	MP2	MP4	MRSA	MDQ	MP0	MW_100
					Sample Name:	MW-AD-01	MW-AD-3	MW-AD-4	MW-B9	MW-DP1	MW-DP5	EB-101	EB-102	MW-EB103	MW-EB104	MW-EB105	MW-EB106	MW-EB107	MW-EB108	MW-MP2	MW-MP3	MW-MP4	MW-MP5A	MW-MP8	MW-MP9	MW-109
					Sample Date:	12/20/2016	12/20/2016	12/21/2016	1/3/2017	1/4/2017	12/29/2016	12/28/2016	12/28/2016	1/3/2017	1/3/2017	1/3/2017	1/3/2017	1/3/2017	1/3/2017	1/4/2017	1/4/2017	1/5/2017	12/29/2016	1/4/2017	1/4/2017	1/5/2017
		М	lay 2016		May 2016																					
			JSEPA		USEPA																					
	CAS		apwater	USEPA	Commercial																					
Analyte	Number U		RSL	MCL	VISL	0.004011	0.004044	2.222	0.000	0.004011	0.004011	0.0040	0.004044	0.004044	0.004044	0.0050	0.0044	0.004011	0.004011	0.004011	0.000	0.004011	0.0070	0.0040	0.004041	0.00401
rsenic hromium		ng/l 0 ng/l	2.2	0.01 0.1		0.0010 U 0.0011	0.0010 U 0.0010 U	0.0028 0.0010 U	0.0032 0.0010 U	0.0010 U 0.0013	0.0010 U 0.0010 U	0.0013	0.0010 U 0.0025	0.0010 U 0.0010 U	0.0010 U 0.0017	0.0052 0.0010 U	0.0014 0.0010 U	0.0010 U 0.0013	0.0010 U 0.0010 U	0.0010 U 0.0013	0.0096	0.0010 U 0.0010 U	0.0070 0.0010 U	0.0019 0.0010 U	0.0010 U 0.0010 U	0.0010 L
ead	1 1 1 0 11 0 1		0.015	0.015		0.0011 U	0.0010 U	0.022	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 L													
1ercury			0.00057	0.002		0.00020 U	0.00034	0.00020 U	0.00020 (
'anadium			0.0086			0.0062 0.0015	0.0050 U 0.00010 U	0.0050 U 0.00013	0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.0050 U 0.0014	0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.0050 U 0.00027	0.0050 U 0.00010 U	0.0050 U	0.0050 U 0.00010 U	0.012 0.00010 U	0.010 0.00010 U	0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.0050 L 0.00010 l
cenaphthene .nthracene			0.033			0.0013	0.00010 U	0.00013 0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.0014	0.00010 U	0.00010 U	0.00010 U	0.00027	0.00010 U	0.00010 U 0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.000101
enzo(a)anthracene	56-55-3		0.000012			0.00010 U	0.00010 (
enzo(a)pyrene enzo(b)fluoranthene			0.000034	0.0002		0.00010 U 0.00010 U	0.00010 (
enzo(g,h,i)perylene		ng/I				0.00010 U	0.000101																			
enzo(k)fluoranthene	207-08-9		0.00034			0.00010 U	0.00010 (
Chrysene Tuoranthene		ng/l ng/l	0.0034			0.00010 U 0.00010 U	0.00010 (
luorene			0.029			0.00010	0.00010 U	0.00017	0.00010 U	0.000101																
laphthalene	91-20-3		0.00017		0.02	0.015	0.00010 U	0.00092	0.00010 U	0.00010 U	0.00010 U	0.00070	0.00010 U	0.00010 (
Phenanthrene Pyrene		ng/l ng/l	0.012			0.0016	0.00010 U 0.00010 U	0.00043 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00026 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 (
Sasoline Range Organics		ng/I	0.012			0.00032 0.0500 U	0.00010 U	0.00010 0	0.0500 U	0.00010	0.00010 0	0.0500 U	0.0500 L													
Diesel Range Organic (C10-C28)		ng/l				0.50 U	0.25 U	0.25 U	0.25 U	0.25 U	0.50 U	0.50 U	0.50 U	0.25 U	0.25 U	0.25 U	0.26	0.25 U	0.25 U	0.25 U	0.25 U	0.50 U	0.50 U	0.25 U	0.25 U	0.50 U
Dil Range Organics (>C28-C40)		ng/l	1.4			1.0 U	0.50 U 0.0379	0.50 U 0.0416	0.50 U	0.50 U 0.0082	1.0 U 0.0120	1.0 U	1.0 U 0.0088	0.50 U 0.0156	0.50 U 0.0062	0.50 U 0.00394	0.50 U 0.0164	0.50 U 0.0040 U	0.50 U 0.0059	0.50 U 0.0094	0.50 U 0.0049	1.0 U 0.0050	1.0 U	0.50 U 0.0083	0.50 U 0.0155	1.0 U 0.0063
Acetone Benzene		ng/l ng/l (0.00046	0.005	9500 0.0069	0.0250 0.00050 U	0.00050 U	0.00050 U	0.0053 0.00050 U	0.00050 U	0.00050 U	0.0252 0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.000594 0.00050 U	0.00050 U	0.0040 U	0.0059 0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.0079 0.00050 U	0.00050 U	0.00050 U	0.00050
romodichloromethane		ng/l (0.00013	0.08	0.0038	0.00050 U	0.00050 (
Bromoform			0.0033	0.08	0.51	0.00050 U	0.00050 (
Bromomethane P-Butanone (MEK)		ng/l (ng/l	0.00075		0.0073 940	0.00050 U 0.0020 U	0.00050 U																			
Carbon Disulfide			0.081		0.52	0.0010 U	0.0010 L																			
Carbon Tetrachloride			0.00046	0.005	0.0018	0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U	0.00050 (
CFC-12		ng/l ng/l	0.52		0.0031	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U	0.00050 U 0.0010 U	0.00050 U	0.00050 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U
Chlorobenzene			0.0078	0.1	0.17	0.00050 U	0.00050																			
Chlorodibromomethane			0.00087	0.08	9.7	0.00050 U	0.00050 (
Chloroethane Chloroform		ng/l ng/l (2.1 0.00022	0.08	0.0036	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 (
Chloromethane			0.019		0.11	0.00050 U	0.00050 (
,2-Dibromo-3-chloropropane ,2-Dibromoethane			.0000075	0.0002 0.00005	0.00034 0.00077	0.00020 U 0.0010 U	0.00035 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U						
,1-Dichloroethane			0.0028	0.00005	0.00077	0.0010 U	0.00050 (
,2-Dichloroethane			0.00017	0.005	0.0098	0.00050 U	0.00061	0.00050 U	0.00050																	
,1-Dichloroethene			0.028	0.007	0.082	0.00050 U	0.00050 (
rans-1,2-Dichloroethene			0.0036	0.07		0.0010 U 0.00050 U	0.0010	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 L																
Dichloromethane	75-09-2	ng/l	0.011	0.005	2	0.00050 U	0.00050																			
,2-Dichloropropane			0.00044	0.005	0.011	0.00050 U	0.00050 (
ris-1,3-Dichloropropene rans-1,3-Dichloropropene			0.00047 0.00047		0.021	0.00050 U 0.00050 U	0.00050 (
thanol	64-17-5	ng/l				0.5 U	0.5 U																			
thylbenzene			0.0015	0.7	0.015	0.00050 U 0.0010 U	0.00050 U																			
sopropylbenzene fethyl Acetate		ng/l ng/l	2			0.0010 U	0.0010 C																			
lethyl N-Butyl Ketone (2-Hexanone)	591-78-6 I		0.0038		3.4	0.0010 U	0.0010 L																			
Methyl-2-Pentanone		ng/l	0.63		230	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.0014	0.0010 U 0.00050 U	0.0010 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U	0.0010 U 0.0453	0.0010 U	0.0010 U 0.0082	0.0010 U 0.0043	0.0010 U 0.0016	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.0019	0.0010 U	0.0010 U 0.00050 U	0.0010 U	0.0010 L
ethyl-tert-butyl ether tyrene (Monomer)	100.0	ng/l ng/l	0.014	0.1	3.9	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.0014 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.0018 0.0010 U	0.0453 0.0010 U	0.0612 0.0010 U	0.0082 0.0010 U	0.0043 0.0010 U	0.0016 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.0019 0.0010 U	0.0025 0.0010 U	0.00050 U 0.0010 U	0.0025 0.0010 U	0.00050 U
rt-Butyl alcohol	75-65-0	ng/l				0.286	0.2 U	0.685	1.22	0.2 U	0.2 U	0.2 U	0.367	0.2 U	0.2 U											
1,2,2-Tetrachloroethane			0.000076		0.014	0.00050 U	0.00050 (
etrachloroethene oluene		ng/l ng/l	0.0041	0.005	0.024 8.1	0.00050 U 0.00050 U	0.00050																			
1,1-Trichloroethane	100 00 0	ng/l	0.8	0.2	3.1	0.00050 U	0.00050																			
1,2-Trichloroethane			0.000041	0.005	0.0026	0.00050 U	0.00050 U	0.0019	0.00050 U	0.00050																
richloroethene inyl chloride			0.00028 0.000019	0.005 0.002	0.0022	0.00050 U 0.00050 U	0.00064 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 (
n&p-Xylene			0.019	10	0.0025	0.0020 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 t
									0.0010 U	0.0010 U										0.0010 U	0.0010 U	0.0010 U				0.0010 L

Puma 2016-GW (Table 2).xlsx 1/4



							Location: ample Name: ample Date:	MW-110AB MW-110AB 1/17/2017	MW-110B2 MW-110B2 1/17/2017	MW-111A MW-111A 1/17/2017	MW-114A MW-114A 1/17/2017	MW-13A MW-13A 1/12/2017	MW-13B2 MW-13B2 1/12/2017	MW-15A MW-15A 12/22/2016	MW-15B MW-15B 12/22/2016	MW-15B2 MW-15B2 12/22/2016	MW-16C MW-16C 12/28/2016	MW-17B MW-17B 1/18/2017	MW-18D MW-18D 12/27/2016	MW-20B MW-20B 1/19/2017	MW-21B MW-21B 1/19/2017	MW-30A MW-30A 1/19/2017	MW-33A MW-33A 12/21/2016	MW-37A MW-37A 1/12/2017	MW-38A MW-38A 1/18/2017	MW-48A 48A 1/5/2017	MW-57A MW-57A 12/20/2016	MW-6 MW-6 1/18/20
	Analysis	CAS	. 11-24	May 20 USEF Tapwa	PA ater U	JSEPA MCI	May 2016 USEPA Commercial																					
010 /	Analyte Arsenic	7440-38-2	mg/l	0.0000		0.01	VISL	0.0012	0.0010 U	0.0039	0.0051	0.0057	0.0049	0.0016	0.0014	0.019	0.0017	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.013	0.0014	0.0010 U	0.0010 U	0.0031	0.0010
–	Chromium	7440-36-2				0.01		0.0012	0.0010 U	0.0039	0.0051	0.0057 0.0010 U	0.0049 0.0010 U	0.0016 0.0010 U	0.0014 0.0010 U	0.019 0.0010 U	0.0017	0.0010 0	0.0010 U	0.0010 0	0.0010 0	0.0010 0	0.0010 U	0.0014 0.0010 U	0.0010 U	0.0010 0	0.0031 0.0010 U	0.0010
	Lead	7439-92-1				0.015		0.0010 U	0.0010 U	0.0017	0.012	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.010	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0014	0.031	0.0010 U	0.0010
N	Mercury	7487-94-7				0.002		0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.045	0.00020 U	0.00020	0.00027	0.00027	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.0002
	Vanadium	7440-62-2						0.20	0.0050 U	0.0050 U	0.041	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.24	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0070	0.0050 U	0.0050 U	0.0050
	Acenaphthene	83-32-9	mg/l					0.00045	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00016	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.0010	0.00053	0.00010 U	0.00010 U	0.0028	0.0001
	Anthracene Benzo(a)anthracene	120-12-7 56-55-3	mg/l					0.00023 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00019 0.00010 U	0.0001
	Benzo(a)pyrene	50-32-8	mg/l			0.0002		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.000
	Benzo(b)fluoranthene	205-99-2	mg/l					0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.0001
	Benzo(g,h,i)perylene	191-24-2	mg/l					0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.0001
	Benzo(k)fluoranthene	207-08-9	mg/l					0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.000
	Chrysene Fluoranthene	218-01-9 206-44-0	mg/l					0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.0001
	Fluorene	86-73-7	mg/l					0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 0	0.00045	0.00010 U	0.00010 U	0.0046	0.000
١	Naphthalene	91-20-3	mg/l				0.02	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00024	0.00010 U	0.00010 U	0.00010 U	0.00012	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.0015	0.0414	0.00010 U	0.00010 U	0.0011	0.000
F	Phenanthrene	85-01-8	mg/l					0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00015	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00020	0.00010 U	0.00010 U	0.0016	0.000
DO4	Pyrene	129-00-0	mg/l		2			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.000
	Gasoline Range Organics Diesel Range Organic (C10-C28)		mg/l		-			0.0500 U 0.50 U	0.0500 U 0.50 U	0.0500 U 0.50 U	0.0500 U 0.50 U	0.0787 0.50 U	0.500 0.50 U	0.0500 U 0.50 U	0.0500 U 0.50 U	0.0784 0.50 U	0.0500 U 0.50 U	0.0500 U 0.50 U	0.0500 U 0.50 U	0.0500 U 0.50 U	0.0500 U 0.50 U	0.0500 U 0.50 U	0.383	1.740 0.94	0.0500 U 0.50 U	0.0500U 0.50 U	0.0715	0.050
	Oil Range Organics (>C28-C40)		mg/l	6				1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0
	Acetone	67-64-1	mg/l				9500	0.0120	0.0043	0.0040 U	0.0040 U	0.0122	0.0103	0.0121	0.0229	0.0156	0.0189	0.0063	0.0282	0.0040 U	0.0040 U	0.0040 U	0.0134	0.0040 U	0.0040 U	0.033	0.0191	0.00
	Benzene	71-43-2	mg/l			0.005	0.0069	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0023	0.00050 U	0.00050 U	0.00050 U	0.000
	Bromodichloromethane	75-27-4	mg/l			80.0	0.0038	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.000
	Bromoform Bromomothopo	75-25-2 74-83-9	mg/l			80.0	0.51	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.000
	Bromomethane 2-Butanone (MEK)	78-93-3	mg/l				940	0.00030 U	0.00030 U	0.00030 U	0.00030 U	0.00030 U	0.0020 U	0.00030 U	0.00030 U	0.00030 U	0.0020 U	0.00030 U	0.00030 U	0.00030 U	0.00030 U	0.00030 U	0.00030 U	0.00030 U	0.00030 U	0.00030 U	0.00030 U	0.00
	Carbon Disulfide	75-15-0	mg/l				0.52	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.00
	Carbon Tetrachloride	56-23-5	mg/l	0.000	46	0.005	0.0018	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00
	CFC-11	75-69-4	mg/l					0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0010 U	0.00050 U	0.00050 U	0.00050 U	0.000
	CFC-12 Chlorobenzene	75-71-8 108-90-7	mg/l			0.1	0.0031	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0020 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.00
	Chlorodibromomethane	124-48-1	mg/l			0.08		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00030 U	0.00050 U	0.00050 U	0.00050 U	0.00
	Chloroethane	75-00-3	mg/l				9.7	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00
C	Chloroform	67-66-3	mg/l			0.08	0.0036	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00062	0.00050 U	0.00050 U	0.00
	Chloromethane	74-87-3	mg/l				0.11	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00096	0.00050 U	0.00050 U	0.00061	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00
	1,2-Dibromo-3-chloropropane 1,2-Dibromoethane	96-12-8 106-93-4	mg/l			0.0002	0.00034	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.0020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.00020 U 0.0010 U	0.0020 U 0.0010 U	0.00020 U 0.0010 U	0.00
	1,1-Dichloroethane	75-34-3	mg/l				0.00077	0.00050 U	0.00050 U	0.0010 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0010 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0010 U	0.00050 U	0.00
	1,2-Dichloroethane	107-06-2	mg/l		17	0.005	0.0098	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00
	1,1-Dichloroethene	75-35-4	mg/l			0.007	0.082	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0
	cis-1,2-Dichloroethene	156-59-2	mg/l			0.07		0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.0016	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0
	trans-1,2-Dichloroethene Dichloromethane	156-60-5 75-09-2	mg/l			0.005		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0016 0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 0	0.00050 U	0.00050 U	0.00050 U	0.00
	1,2-Dichloropropane	78-87-5	mg/l			0.005	0.011	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00
	cis-1,3-Dichloropropene	10061-01-			47		0.021	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00
	trans-1,3-Dichloropropene	10061-02-			47		0.021	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00
	Ethanol Ethanol	64-17-5 100-41-4	mg/l		-	0.7	0.015	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	1 U 0.0179	0.5 U 0.00050 U	0.5 U 0.00050 U	0.5 U 0.00050 U	0.00
	Ethylbenzene Isopropylbenzene	98-82-8	mg/l				0.015	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0179	0.00050 U	0.00050 U	0.00050 U	0.00
	Methyl Acetate	79-20-9	mg/l					0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0010 U	0.0020 U	0.0020 U	0.0020 U	0.0010 U	0.0010 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0
	Methyl N-Butyl Ketone (2-Hexanone)	591-78-6	mg/l		38		3.4	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0
	4-Methyl-2-Pentanone	108-10-1	mg/l				230	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0
	Methyl-tert-butylether	1634-04-4 100-42-5				0.1	3.9	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.0019 0.0010 U	0.0145 0.0010 U	0.0066 0.0010 U	0.00050 U 0.0010 U	0.0036 0.0010 U	0.0020 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.0028 0.0010 U	0.0028 0.0010 U	0.0084 0.0010 U	0.0012 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.0079 0.0010 U	0.0
	Styrene (Monomer) tert-Butyl alcohol	75-65-0	mg/l		-	0.1	J.9 	0.0010 U	0.0010 U	0.0010 U	0.0010 U	9.77	1.85	4.52	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	2.54	0.0010 0	0.0010 U	0.0010 U	0.0010 0	0.0
	1,1,2,2-Tetrachloroethane	79-34-5	mg/l		76		0.014	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0
	Tetrachloroethene	127-18-4		0.004		0.005	0.024	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0
	Toluene	108-88-3	mg/l			1	8.1	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00069	0.00050 U	0.00050 U	0.00050 U	0.0
	1,1,1-Trichloroethane	71-55-6	mg/l			0.2	3.1	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0
	1,1,2-Trichloroethane Trichloroethene	79-00-5 79-01-6	mg/l			0.005 0.005	0.0026 0.0022	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.0
	Vinyl chloride	75-01-4	mg/l			0.002	0.0025	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0
	m&p-Xylenes		mg/l			10	0.16	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0403	0.0020 U	0.0020 U	0.0020 U	0.0
	o-Xylene	95-47-6	mg/l	0.01	9	10	0.21	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0027	0.0010 U	0.0010 U	0.0010 U	0.0

Notes:

1. USEPA May 2016 Tapwater Regional Screening Levels (RSLs) and USEPA Maximum Contaminant Levels (MCLs) were obtained from the USEPA May 2016 Regional Screening Level Tables (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016).

2. USEPA May 2016 Commercial Vapor Intrusion Screening Levels (VISLs) were obtained from the USEPA May 2016 Vapor Intrusion Screening Level Calculator (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016).

3. USEPA May 2016 Tapwater RSL, USEPA MCL and USEPA MCL for Total Xylenes was used to evaluate m&p-Xylenes and o-Xylene. The USEPA May 2016 Commercial VISL and Tapwater RSL for 1,3-Dichloropropene was used to evaluate cis-1,3-Dichloropropene and trans-1,3-Dichloropropene.

5. Bolded values are greater than the USEPA May 2016 Commercial VISL.

6. Grey shaded values are greater than the USEPA May 2016 Commercial VISL.

7. Italicized values are greater than the USEPA May 2016 Commercial VISL.

8. Bolteriations are as follows:

Abbreviations are as follows:

mg/l = milligrams per liter

U = The sample was analyzed for this compound, but it was not detected. The associated value is the compound quantitation limit.

-- = value unavailable

2/4 Puma 2016-GW (Table 2).xlsx



						Location: Sample Name: Sample Date:	MW-65A MW-65A 12/21/2016	MW-83A MW-83A 12/20/2016	MW-83B2 MW-83B2 12/21/2016	MW-88A MW-88A 12/27/2016	MW-75B2 MW-75B2 1/17/2017	MW-76A MW-76A 1/12/2017	MW-76B2 MW-76B2 1/12/2017	MW-77B MW-77B 1/19/2017	MW-78B MW-78B 1/19/2017	MW-84A MW-84A 1/18/2017	MW-84B2 MW-84B2 1/18/2017	MW-86A MW-86A 12/29/2016	MW-87A MW-87A 12/27/2016	MW-91A MW-91A 12/27/2016	MW-98A MW-98A 12/27/2016	MW-99A MW-99A 12/27/2016	MW-110AB MW-110AB 12/27/2016	MW-B1 MW-B1 12/28/2016	PMW-116 MW-P116 12/21/2016	PMW-117 MW-P117 12/21/2016	PMW-118 MW-P118 12/20/2016
Mathad	Analyte	CAS	Unite	May 2016 USEPA Tapwater	USEPA	May 2016 USEPA Commercial VISL																					
Method 6010		7440-38-2	mg/l	0.000052	0.01		0.0013	0.0010 U	0.0019	0.0017	0.0010 U	0.0010 U	0.0010 U	0.0015	0.0010 U	0.012	0.0026	0.0010 U	0.0010 U	0.0041	0.0010 U	0.0010 U	0.0010 U	0.0050	0.0017	0.0010 U	0.0010 U
	Chromium	7440-47-3	mg/l	2.2	0.1		0.0012	0.0010 U	0.0056	0.0017 0.0010 U	0.046	0.0010 U	0.0010 U	0.0072	0.0074	0.0010 U	0.0010 U	0.0010 U	0.024	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.018	0.0017	0.0010 U	0.0011
	Lead	7439-92-1	mg/l	0.015	0.015		0.0010 U	0.0010 U	0.0013	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0012	0.0010 U	0.0010 U	0.0010 U	0.0066	0.0010	0.0010 U	0.0010 U
ļ	Mercury	7487-94-7	mg/l	0.00057	0.002		0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.0019	0.00020 U	0.00020 U	0.00020 U	0.00093	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.0020 U	0.00020 U	0.0017
1-4	Vanadium	7440-62-2	mg/l	0.0086			0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.0050 U	0.0050 U	0.0050 U	0.0060	0.0050 U 0.00010 U	0.026	0.0050 U	0.0050 U 0.00010 U	0.0050 U	0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.0050 U 0.00074	0.0050 U 0.00044	0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.056 0.00010 U	0.0050 U 0.00010 U	0.0050 U 0.00010 U	0.0050 U
Method 8270	Acenaphthene Anthracene	83-32-9 120-12-7	mg/l mg/l	0.053			0.00010 U	0.00010 U	0.00010 U 0.00010 U	0.0013 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U	0.00010 U 0.00010 U	0.00010 U	0.00010 U	0.00074 0.00010 U	0.00044 0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U 0.00010 U
ļ	Benzo(a)anthracene	56-55-3	mg/l	0.000012			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Benzo(a)pyrene	50-32-8	mg/l	0.0000034	0.0002		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
ļ	Benzo(b)fluoranthene	205-99-2	mg/l	0.000034			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
ļ	Benzo(g,h,i)perylene Benzo(k)fluoranthene	191-24-2 207-08-9	mg/l mg/l	0.00034			0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U	0.00010 U 0.00010 U	0.00010 U	0.00010 U 0.00010 U	0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U
ļ	Chrysene	218-01-9	mg/l	0.00034			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
-	Fluoranthene	206-44-0	mg/l	0.08			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Fluorene	86-73-7	mg/l	0.029			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.0013	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
ļ	Naphthalene Phenanthrene	91-20-3 85-01-8	mg/l mg/l	0.00017		0.02	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00023 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.210	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U	0.00010 U 0.00010 U
ļ	Pyrene	129-00-0	mg/l	0.012			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010	0.00010 U	0.00073 0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Gasoline Range Organics		mg/l				0.0500 U	0.0500 U	0.0500 U	0.0790	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	32.6	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0682
	Diesel Range Organic (C10-C28)		mg/l				0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	4.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	Oil Range Organics (>C28-C40) Acetone	67-64-1	mg/l mg/l	1.4		9500	1.0 U 0.0180	1.0 U 0.0207	1.0 U 0.0207	1.0 U 0.0156	1.0 U 0.0175	1.0 U 0.0076	1.0 U 0.0057	1.0 U 0.0040 U	1.0 U 0.0040 U	1.0 U 0.0509	1.0 U 0.0040 U	1.0 U 0.0168	1.0 U 0.0071	1.0 U 0.040 U	1.0 U 0.0148	1.0 U 0.0156	1.0 U 0.0156	1.0 U 0.0094	1.0 U 0.0149	1.0 U 0.0164	1.0 U 0.0156
eti iou 6200	Benzene	71-43-2	mg/l	0.00046	0.005	0.0069	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0057 0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	1.08	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
-	Bromodichloromethane	75-27-4	mg/l	0.00013	0.08	0.0038	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
ļ	Bromoform	75-25-2	mg/l	0.0033	0.08	0.51	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
ļ	Bromomethane 2-Butanone (MEK)	74-83-9 78-93-3	mg/l mg/l	0.00075		0.0073 940	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.0050 U 0.020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U	0.00050 U 0.0020 U
ļ	Carbon Disulfide	75-15-0	mg/l	0.081		0.52	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0010 U	0.0020 U	0.0020 U	0.0020 U	0.010 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
	Carbon Tetrachloride	56-23-5	mg/l	0.00046	0.005	0.0018	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	CFC-11	75-69-4	mg/l	0.52		0.0031	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	CFC-12 Chlorobenzene	75-71-8 108-90-7	mg/l mg/l	0.02	0.1	0.0031	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.0050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U
	Chlorodibromomethane	124-48-1	mg/l	0.00087	0.08		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Chloroethane	75-00-3	mg/l	2.1		9.7	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Chloroform Chloromethane	67-66-3 74-87-3	mg/l mg/l	0.00022	0.08	0.0036	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.0050 U 0.0050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00056 0.0050 U
	1,2-Dibromo-3-chloropropane	96-12-8	mg/l	0.00000033	0.0002	0.00034	0.00020 U	0.00030 U	0.00020 U	0.00030 U	0.0020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.0020 U	0.00030 U	0.00030 U	0.00020 U	0.114	0.00020 U	0.00020 U	0.00020 U
ļ	1,2-Dibromoethane	106-93-4	mg/l	0.0000075	0.00005	0.00077	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
ļ	1,1-Dichloroethane 1,2-Dichloroethane	75-34-3 107-06-2	mg/l	0.0028	0.005	0.033	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.0050 U 0.0050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U
ļ	1.1-Dichloroethene	75-35-4	mg/l mg/l	0.00017	0.003	0.0098	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
-	cis-1,2-Dichloroethene	156-59-2	mg/l	0.0036	0.07		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0080
	trans-1,2-Dichloroethene	156-60-5	mg/l	0.036	0.1		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00062	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
ļ	Dichloromethane 1,2-Dichloropropane	75-09-2 78-87-5	mg/l mg/l	0.011	0.005	0.011	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.0050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U
	cis-1,3-Dichloropropene	10061-01-5	mg/l	0.00047		0.021	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	trans-1,3-Dichloropropene	10061-02-6	mg/l	0.00047		0.021	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Ethanol	64-17-5	mg/l				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ļ	Ethylbenzene Isopropylbenzene	100-41-4 98-82-8	mg/l mg/l	0.0015 0.045	0.7	0.015	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.690	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U	0.00050 U 0.0010 U
	Methyl Acetate	79-20-9	mg/l	2			0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
ļ	Methyl N-Butyl Ketone (2-Hexanone)	591-78-6	mg/l	0.0038		3.4	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
ļ	4-Methyl-2-Pentanone Methyl-tert-butylether	108-10-1 1634-04-4	mg/l mg/l	0.63		230	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.0014	0.0010 U 0.0047	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.0033	0.0010 U 0.00050 U	0.0010 U 0.0011	0.0010 U 0.00050 U	0.010 U 0.0050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.00050 U	0.0010 U 0.0015	0.0010 U 0.00050 U
ļ	Styrene (Monomer)	100-42-5	mg/l	0.014	0.1	3.9	0.00050 U	0.00050 U	0.0010 U	0.0014 0.0010 U	0.0047 0.0010 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0033 0.0010 U	0.00050 U	0.0011 0.0010 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0015 0.0010 U	0.00050 U
-	tert-Butyl alcohol	75-65-0	mg/l				0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	11.7	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ļ	1,1,2,2-Tetrachloroethane	79-34-5	mg/l	0.000076		0.014	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
ļ	Tetrachloroethene Toluene	127-18-4 108-88-3	mg/l mg/l	0.0041	0.005	0.024 8.1	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.0050 U 0.0050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U
ļ	1,1,1-Trichloroethane	71-55-6	mg/l	0.8	0.2	3.1	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
ľ	1,1,2-Trichloroethane	79-00-5	mg/l	0.000041	0.005	0.0026	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
-	Trichloroethene Vinyl chloride	79-01-6 75-01-4	mg/l mg/l	0.00028	0.005 0.002	0.0022 0.0025	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.0050 U 0.0050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.0723 0.00051
ļ	m&p-Xylenes	75-01-4	mg/I mg/I	0.000019	10	0.0025	0.0050 U	0.00050 U	0.0050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 0	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00051 0.0020 U
	o-Xvlene	95-47-6			10	0.21	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0167	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U

- Notes:

 1. USEPA May 2016 Tapwater Regional Screening Levels (RSLs) and USEPA Maximum Contaminant Levels (MCLs) were obtained from the USEPA May 2016 Regional Screening Level Tables (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016).

 2. USEPA May 2016 Commercial Vapor Intrusion Screening Levels (VISLs) were obtained from the USEPA May 2016 Vapor Intrusion Screening Level Calculator (https://www.epa.gov/rapor-intrusion-screening-levels-vists).

 3. USEPA May 2016 Tapwater RSL, USEPA MCL and USEPA May 2016 Commercial VISL are based on a Target Hazard Quotient (THQ) of 0.1 or Target Cancer Risk (TCR) of 1.1 10 .

 4. The USEPA May 2016 Commercial VISL for Total Xylenes was used to evaluate m&p-Xylenes. The USEPA MCL for Total Xylenes was used to evaluate m&p-Xylenes and o-Xylene. The USEPA May 2016 Commercial VISL and Tapwater RSL for 1,3-Dichloropropene was used to evaluate cis-1,3-Dichloropropene and trans-1,3-Dichloropropene.

 5. Bolided values are greater than the USEPA May 2016 Tapwater RSL.

 6. Grey shaded values are greater than the USEPA May 2016 Commercial VISL.

 7. Italicized values are greater than the USEPA May 2016 Commercial VISL.

 8. Abbreviations are as follows:

 mol/= milliorams per liter

- mg/l = milligrams per liter
- U = The sample was analyzed for this compound, but it was not detected. The associated value is the compound quantitation limit.
- -- = value unavailable

3/4 Puma 2016-GW (Table 2).xlsx



PMW-119 MW-P119							Location: ample Name:	PMW-120 MW-P120	PMW-121 MW-P121	PMW-122 MW-P122	PMW-123 MW-P123	PMW-124 MW-P124	WWTP-1 WWTP-1	WWTP-2 WWTP-2
12/20/2016							Sample Name:	12/19/2016	12/19/2016	12/19/2016	12/19/2016	12/19/2016	12/28/2016	
12/20/2010					May 2016		May 2016	12/13/2010	12/19/2010	12/19/2010	12/13/2010	12/19/2010	12/20/2010	12/20/2010
					USEPA		USEPA							
			CAS		Tapwater	USEPA	Commercial							
	Method	Analyte	Number	Units	RSL	MCL	VISL							
0.0010 U	Method 6010	Arsenic	7440-38-2	mg/l	0.000052	0.01		0.0010 U	0.0034	0.0010 U	0.0010 U	0.0018	0.0020	0.0010 U
0.0010 U	-	Chromium	7440-47-3	mg/l	2.2	0.1		0.0010 U	0.058	0.0010 U	0.0010 U	0.0032	0.0010 U	0.0010 U
0.0010 U 0.00023	-	Lead Mercury	7439-92-1 7487-94-7	mg/l mg/l	0.015 0.00057	0.015 0.002		0.0010 U 0.00020 U	0.012 0.00062	0.0010 U 0.00020 U	0.0010 U 0.00043	0.0010 U 0.0095	0.0010 U 0.00020 U	0.0010 U 0.00020 U
0.0050 U		Vanadium	7440-62-2	mg/l	0.00057			0.00020 U	0.00062	0.0050 U	0.0050 U	0.0093	0.0050 U	0.00020 U
0.00010 U	Method 8270	Acenaphthene	83-32-9	mg/l	0.053			0.00010 U	0.0057	0.00010 U				
0.00010 U		Anthracene	120-12-7	mg/l	0.18			0.00010 U	0.00067	0.00010 U				
0.00010 U 0.00010 U	-	Benzo(a)anthracene Benzo(a)pyrene	56-55-3 50-32-8	mg/l mg/l	0.000012 0.0000034	0.0002		0.00010 U 0.00010 U						
0.00010 U		Benzo(b)fluoranthene	205-99-2	mg/l	0.000034	0.0002		0.00010 U						
0.00010 U		Benzo(g,h,i)perylene	191-24-2	mg/l				0.00010 U						
0.00010 U		Benzo(k)fluoranthene	207-08-9	mg/l	0.00034			0.00010 U						
0.00010 U 0.00010 U	-	Chrysene Fluoranthene	218-01-9 206-44-0	mg/l mg/l	0.0034			0.00010 U 0.00010 U						
0.00010 U		Fluorene	86-73-7	mg/l	0.029			0.00010 U	0.00010 U	0.00010 U	0.000100	0.00010 U	0.00010 U	0.00010 U
0.00010 U		Naphthalene	91-20-3	mg/l	0.00017		0.02	0.00010 U	0.00088	0.00010 U				
0.00010 U		Phenanthrene	85-01-8	mg/l				0.00010 U	0.00010 U	0.00010 U	0.00034	0.00010 U	0.00041	0.00010 U
0.00010 U 0.0500 U	Method 8021	Pyrene Gasoline Range Organics	129-00-0	mg/l	0.012			0.00010 U 0.0500 U	0.00010 U 0.113	0.00010 U 0.0500 U				
0.0500 U	Method 8015	Diesel Range Organic (C10-C28)		mg/l mg/l				0.50 U	0.50 U	0.50 U	0.0500 U	0.50 U	1.0	0.0500 U
1.0 U		Oil Range Organics (>C28-C40)		mg/l	6			1.0 U						
0.0195	Method 8260	Acetone	67-64-1	mg/l	1.4		9500	0.0151	0.0118	0.0136	0.0113	0.0120	0.0156	0.0180
0.00050 U		Benzene	71-43-2	mg/l	0.00046	0.005	0.0069	0.00050 U						
0.00050 U 0.00050 U	-	Bromodichloromethane Bromoform	75-27-4 75-25-2	mg/l mg/l	0.00013 0.0033	0.08	0.0038 0.51	0.00050 U 0.00050 U						
0.00050 U		Bromomethane	74-83-9	mg/l	0.00075		0.0073	0.00050 U						
0.0020 U		2-Butanone (MEK)	78-93-3	mg/l	0.56		940	0.0020 U						
0.0010 U		Carbon Disulfide	75-15-0	mg/l	0.081		0.52	0.0010 U						
0.00050 U 0.00050 U	-	Carbon Tetrachloride CFC-11	56-23-5 75-69-4	mg/l mg/l	0.00046 0.52	0.005	0.0018	0.00050 U 0.00050 U						
0.0010 U		CFC-12	75-71-8	mg/l	0.02		0.0031	0.0010 U						
0.00050 U		Chlorobenzene	108-90-7	mg/l	0.0078	0.1	0.17	0.00050 U						
0.00050 U		Chlorodibromomethane	124-48-1	mg/l	0.00087	0.08		0.00050 U						
0.00050 U 0.00050 U	-	Chloroethane Chloroform	75-00-3 67-66-3	mg/l mg/l	2.1 0.00022	0.08	9.7 0.0036	0.00050 U 0.00050 U						
0.00065		Chloromethane	74-87-3	mg/l	0.00022		0.0030	0.00050 U						
0.00020		1,2-Dibromo-3-chloropropane	96-12-8	mg/l	0.00000033	0.0002	0.00034	0.00020 U						
0.0010 U		1,2-Dibromoethane	106-93-4	mg/l	0.0000075	0.00005	0.00077	0.0010 U						
0.00050 U 0.00050 U	-	1,1-Dichloroethane 1,2-Dichloroethane	75-34-3 107-06-2	mg/l mg/l	0.0028 0.00017	0.005	0.033 0.0098	0.00050 U 0.00050 U						
0.00050 U		1,1-Dichloroethene	75-35-4	mg/l	0.00017	0.003	0.082	0.00050 U						
0.0010 U		cis-1,2-Dichloroethene	156-59-2	mg/l	0.0036	0.07		0.0010 U						
0.00050 U		trans-1,2-Dichloroethene	156-60-5	mg/l	0.036	0.1		0.00050 U						
0.00050 U 0.00050 U	-	Dichloromethane 1,2-Dichloropropane	75-09-2 78-87-5	mg/l mg/l	0.011 0.00044	0.005 0.005	0.011	0.00050 U 0.00050 U						
0.00050 U		cis-1,3-Dichloropropene	10061-01-5		0.00047		0.021	0.00050 U						
0.00050 U		trans-1,3-Dichloropropene	10061-02-6	mg/l	0.00047		0.021	0.00050 U						
0.5 U		Ethanol	64-17-5	mg/l				0.5 U						
0.00050 U 0.0010 U	-	Ethylbenzene Isopropylbenzene	100-41-4 98-82-8	mg/l mg/l	0.0015 0.045	0.7	0.015 0.37	0.00050 U 0.0010 U	0.00050 U 0.0053	0.00050 U 0.0010 U				
0.0010 U		Methyl Acetate	79-20-9	mg/l	2			0.0010 U	0.0033 0.0020 U	0.0010 U				
0.0010 U		Methyl N-Butyl Ketone (2-Hexanone)	591-78-6	mg/l	0.0038		3.4	0.0010 U						
0.0010 U	-	4-Methyl-2-Pentanone	108-10-1	mg/l	0.63		230	0.0010 U						
0.00050 U 0.0010 U	-	Methyl-tert-butylether Styrene (Monomer)	1634-04-4 100-42-5	mg/l mg/l	0.014 0.12	0.1	3.9	0.00050 U 0.0010 U	0.0018 0.0010 U	0.00050 U 0.0010 U				
0.0010 U	1	tert-Butyl alcohol	75-65-0	mg/l			3.9	0.0010 U						
0.00050 U		1,1,2,2-Tetrachloroethane	79-34-5	mg/l	0.000076		0.014	0.00050 U						
0.00050 U	-	Tetrachloroethene	127-18-4	mg/l	0.0041	0.005	0.024	0.00050 U						
0.00050 U 0.00050 U	-	Toluene 1,1,1-Trichloroethane	108-88-3 71-55-6	mg/l	0.11	0.2	8.1 3.1	0.00050 U 0.00050 U						
0.00050 U	-	1,1,1-Trichloroethane	79-00-5	mg/l mg/l	0.8	0.2	3.1 0.0026	0.00050 U						
0.0074	1	Trichloroethene	79-01-6	mg/l	0.00028	0.005	0.0020	0.00050 U	0.0017	0.00050 U				
0.00050 U		Vinyl chloride	75-01-4	mg/l	0.000019	0.002	0.0025	0.00050 U						
0.0020 U	-	m&p-Xylenes		mg/l	0.019	10	0.16	0.0020 U						
0.0010 U		o-Xylene	95-47-6	mg/l	0.019	10	0.21	0.0010 U						

- 1. USEPA May 2016 Tapwater Regional Screening Levels (RSLs) and USEPA Maximum Contaminant Levels (MCLs) were obtained from the USEPA May 2016 Regional Screening Level Tables (https://www.epa.gov/risk/region 2. USEPA May 2016 Commercial Vapor Intrusion Screening Level Calculator (https://www.epa.gov/vapor-intrusion-screening-le 3. USEPA May 2016 Tapwater RSL, USEPA MCL and USEPA May 2016 Commercial VISL are based on a Target Hazard Quotient (THQ) of 0.1 or Target Cancer Risk (TCR) of 1 x 10 6.

 4. The USEPA May 2016 Commercial VISL for Total Xylenes was used to evaluate m&p-Xylenes and o-Xylene. The USEPA May 2016 Commercial VISL at 5. Bolded values are greater than the USEPA May 2016 Tapwater RSL.

- Grey shaded values are greater than the USEPA MCL.
 Italicized values are greater than the USEPA May 2016 Commerical VISL.
 Abbreviations are as follows:
- mg/l = milligrams per liter
- U = The sample was analyzed for this compound, but it was not detected. The associated value is the compound quantitation limit.
- -- = value unavailable

4/4 Puma 2016-GW (Table 2).xlsx



						Location: Sample Name: Sample Date:	MW-AD-03 DUP001 12/20/2016	MW-15B DUP002 12/22/2016	MW-B1 DUP003 12/28/2016	MW-EB105 DUP004 1/3/2017	MW-109A DUP005 1/5/2017	MW-75B2 DUP006 1/17/2017	MW-21B DUP007 1/19/2017
Method	Analyte	CAS Number	Units	May 2016 USEPA Tapwater RSL	USEPA MCL	May 2016 USEPA Commercial VISL							
Method 6010	Arsenic	7440-38-2	mg/l	0.000052	0.01		0.0032	0.0010 U	0.0066	0.0052	0.0010U	0.0010 U	0.0010 U
	Chromium	7440-47-3	mg/l	2.2	0.1		0.0010 U	0.0010 U	0.024	0.0010	0.0010 U	0.0049	0.0040
	Lead	7439-92-1	mg/l	0.015	0.015		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0014	0.0010 U
	Mercury	7487-94-7	mg/l	0.00057	0.002		0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.0018	0.00027
	Vanadium	7440-62-2	mg/l	0.0086			0.0071	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Method 8270	Acenaphthene	83-32-9	mg/l	0.053			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Anthracene	120-12-7	mg/l	0.18			0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U	0.00010 U	0.00010 U 0.00010 U
	Benzo(a)anthracene Benzo(a)pyrene	56-55-3 50-32-8	mg/l mg/l	0.000012 0.0000034	0.0002		0.00010 U 0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U 0.00010 U	0.00010 U 0.00010 U	0.00010 U
	Benzo(b)fluoranthene	205-99-2	mg/l	0.000034			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Benzo(g,h,i)perylene	191-24-2	mg/l				0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Benzo(k)fluoranthene	207-08-9	mg/l	0.00034			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Chrysene	218-01-9	mg/l	0.0034			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Fluoranthene	206-44-0	mg/l	0.08			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Fluorene	86-73-7	mg/l	0.029			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Naphthalene	91-20-3	mg/l	0.00017		0.02	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Phenanthrene	85-01-8	mg/l				0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
	Pyrene	129-00-0	mg/l	0.012			0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00020	0.00010 U	0.00010 U
Method 8021	Gasoline Range Organics		mg/l				0.07	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Method 8015	Diesel Range Organic (C10-C28)		mg/l				0.50 U	0.50 U	0.50 U	0.26	0.50 U	0.50 U	0.50 U
Method 8260	Oil Range Organics (>C28-C40) Acetone	67-64-1	mg/l	1.4		9500	1.0 U 0.0155	1.0 U 0.027	1.0 U 0.0140	1.0 U 0.0113	1.0 U 0.0200	1.0 U 0.0074	1.0 U 0.0004 U
netriod 8260	Benzene	71-43-2	mg/l mg/l	0.00046	0.005	0.0069	0.0050 U	0.0050 U	0.0140 0.00050 U	0.00050 U	0.00050 U	0.0074 0.00050 U	0.0004 U
	Bromodichloromethane	75-27-4	mg/l	0.00048	0.003	0.0038	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Bromoform	75-25-2	mg/l	0.0033	0.08	0.51	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Bromomethane	74-83-9	mg/l	0.00075		0.0073	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	2-Butanone (MEK)	78-93-3	mg/l	0.56		940	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
	Carbon Disulfide	75-15-0	mg/l	0.081		0.52	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	Carbon Tetrachloride	56-23-5	mg/l	0.00046	0.005	0.0018	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	CFC-11	75-69-4	mg/l	0.52			0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	CFC-12	75-71-8	mg/l	0.02		0.0031	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	Chlorobenzene	108-90-7	mg/l	0.0078	0.1	0.17	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Chlorodibromomethane	124-48-1	mg/l	0.00087	0.08		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Chloroethane Chloroform	75-00-3 67-66-3	mg/l mg/l	2.1 0.00022	0.08	9.7	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U
	Chloromethane	74-87-3	mg/l	0.00022	0.06	0.0036	0.00065	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	1,2-Dibromo-3-chloropropane	96-12-8	mg/l	0.00000033	0.0002	0.00034	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0000 U
	1,2-Dibromoethane	106-93-4	mg/l	0.0000075	0.00005	0.00077	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	1,1-Dichloroethane	75-34-3	mg/l	0.0028		0.033	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	1,2-Dichloroethane	107-06-2	mg/l	0.00017	0.005	0.0098	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	1,1-Dichloroethene	75-35-4	mg/l	0.028	0.007	0.082	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	cis-1,2-Dichloroethene	156-59-2	mg/l	0.0036	0.07		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	trans-1,2-Dichloroethene	156-60-5	mg/l	0.036	0.1		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Dichloromethane	75-09-2	mg/l	0.011	0.005	2	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	1,2-Dichloropropane	78-87-5	mg/l	0.00044	0.005	0.011	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	cis-1,3-Dichloropropene	10061-01-5	mg/l	0.00047 0.00047		0.021	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	trans-1,3-Dichloropropene Ethanol	10061-02-6 64-17-5	mg/l	0.00047		0.021	0.00050 U 0.5 U	0.00050 U 0.5 U	0.00050 U 0.5 U	0.00050 U 0.5 U	0.00050 U 0.5 U	0.00050 U 0.5 U	0.00050 U 0.5 U
	Ethylbenzene	100-41-4	mg/l mg/l	0.0015	0.7	0.015	0.00050 U	0.5 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Isopropylbenzene	98-82-8	mg/l	0.045		0.37	0.00030 U	0.00030 U	0.00030 U	0.0010 U	0.00030 U	0.00030 U	0.00030 U
	Methyl Acetate	79-20-9	mg/l	2			0.0010 U	0.0020 U	0.0020 U	0.0010 U	0.0020 U	0.0020 U	0.0010 U
	Methyl N-Butyl Ketone (2-Hexanone)	591-78-6	mg/l	0.0038		3.4	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	4-Methyl-2-Pentanone	108-10-1	mg/l	0.63		230	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	Methyl-tert-butylether	1634-04-4	mg/l	0.014		2	0.0080	0.00050 U	0.00050 U	0.00089	0.00050 U	0.0047	0.00050 U
	Styrene (Monomer)	100-42-5	mg/l	0.12	0.1	3.9	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
	tert-Butyl alcohol	75-65-0	mg/l				0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
	1,1,2,2-Tetrachloroethane	79-34-5	mg/l	0.000076		0.014	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Tetrachloroethene	127-18-4	mg/l	0.0041	0.005	0.024	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
	Toluene	108-88-3	mg/l	0.11	0.2	8.1	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U
	1,1,1-Trichloroethane 1,1,2-Trichloroethane	71-55-6 79-00-5	mg/l mg/l	0.8 0.000041	0.005	3.1 0.0026	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U	0.00050 U	0.00050 U 0.00050 U	0.00050 U 0.00050 U
	Trichloroethene	79-00-5	mg/l	0.000041	0.005	0.0026	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00084	0.00050 U
	Vinyl chloride	75-01-4	mg/l	0.000019	0.003	0.0022	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00064 0.00050 U	0.00050 U
	m&p-Xylenes		mg/l	0.019	10	0.16	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0000 U
			mg/l	0.019	10	0.21	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U

- Notes:
 1. USEPA May 2016 Tapwater Regional Screening Levels (RSLs) and USEPA Maximum Contaminant Levels (MCLs) were obtained from the USEPA May 2016 Regional Screening Level Tables (https://www.epa.gov/risk/regional-screening-user) levels-rsls-generic-tables-may-2016).
- 2. USEPA May 2016 Commercial Vapor Intrusion Screening Level (VISLs) were obtained from the USEPA May 2016 Vapor Intrusion Screening Level Calculator (https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visls).
- 3. USEPA May 2016 Tapwater RSL, USEPA MCL and USEPA May 2016 Commercial VISL are based on a Target Hazard Quotient (THQ) of 0.1 or Target Cancer Risk (TCR) of 1 x 10⁻⁶.

 4. The USEPA May 2016 Commercial VISL for Total Xylenes was used to evaluate m&p-Xylenes. The USEPA MCL for Total Xylenes was used to evaluate m&p-Xylenes. The USEPA May 2016 Commercial VISL and Tapwater RSL for 1,3-Dichloropropene was used to evaluate cis-1,3-Dichloropropene and trans-1,3-Dichloropropene.
- 5. Bolded values are greater than the USEPA May 2016 Tapwater RSL.
- Bouloed values are greater man the USEPA May 2016 Tapwater KSL.
 Grey shaded values are greater than the USEPA MCL.
 Italicized values are greater than the USEPA May 2016 Commerical VISL. 8. Abbreviations are as follows:
- mg/l = milligrams per liter
- U = The sample was analyzed for this compound, but it was not detected. The associated value is the compound quantitation limit. -- = value unavailable

1/1 Puma 2016-Duplicate samples (Table 3).xlsx

FIGURES

SOURCE: BAYAMON QUADRANGLE - 1969, PHOTO REVISED: 1982



GRAPHIC SCALE: 1:20,000

Cucharillas

as Palmas

SITE LOCATION

Interamerican University

> PUMA ENERGY CARIBE, LLC PUMA TERMINAL, KM. 2.0 LUCHETTI INDUSTRIAL PARK BAYAMON, PUERTO RICO SEMI-ANNUAL GW SAMPLING - DEC.2016

Escuela La Pis

FORT BUCHANAN

Antena de Radio (WKAQ)

Paente Blanco

Diego

Cementerio Ruente Blance

> Antenas de ((WIAC)

illa España

Monte de Santa Ana

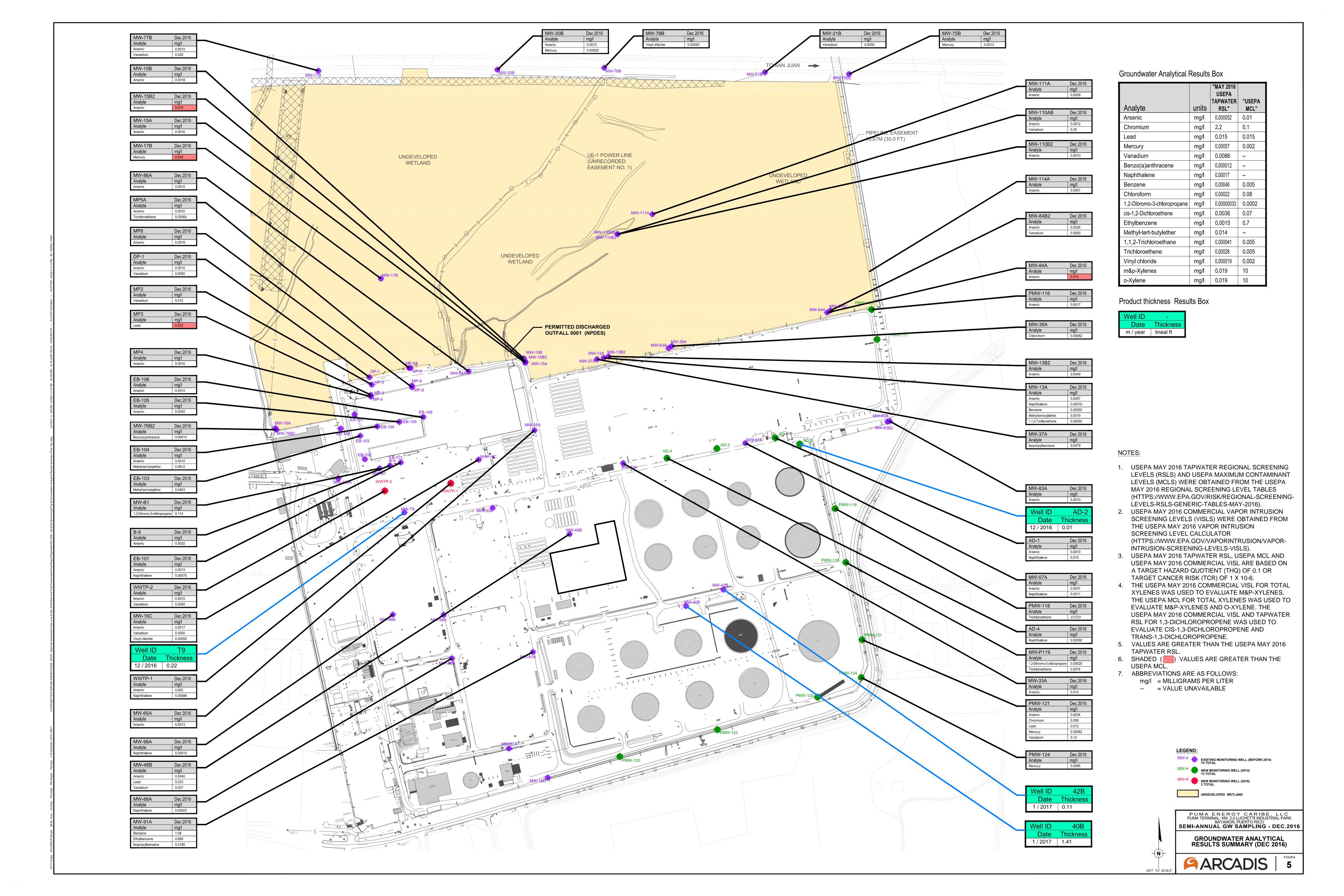
LOCATION MAP



FIGURA

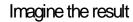
1





APPENDIX A

The Standard Operating Procedures





Water-Level and NAPL Thickness Measurement Procedures

Rev. #: 0

Rev Date: February 27, 2009

Approval Signatures

Prepared by: However Sank Date: 2/27/09

Reviewed by: Michael Gefell (Technical Expert)

Date: 2/27/09

I. Scope and Application

Monitoring well water levels and thickness of non-aqueous phase liquids (NAPLs) will be determined, as appropriate, to develop groundwater elevation contour maps and to assess the presence or absence of NAPL in wells. This SOP applies to light and/or dense NAPLs (LNAPLs and DNAPLs, respectively). In addition, because this SOP describes water-level measurement from surveyed measurement points, this SOP can be followed, to obtain surface water level measurements from surveyed measurement points.

Fluid levels will be measured using an electric water-level probe and/or NAPL-water interface probe from established reference points. Reference points are surveyed, and are established at the highest point at the top of well riser, and will be based on mean sea level, or local/onsite datum. The Operating and Maintenance (O&M) Instruction Manual for the electric water level probe and/or and interface probe should be reviewed prior to commencing work for safe and accurate operation.

II. Personnel Qualifications

Individuals conducting fluid level measurements will have been trained in the proper use of the instruments, including their use for measuring fluid levels and the bottom depth of wells. In addition, ARCADIS field sampling personnel will have current health and safety training including 40-hour HAZWOPER training, site supervisor training, site-specific training, first aid, and CPR, as needed. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and posses the required skills and experience necessary to successfully complete the desired field work. ARCADIS field personnel will also be compliant with client-specific training requirements, such as (but not limited to) LPS or other behavior-based training, and short-service employee restrictions.

III. Equipment List

The following materials, as required, shall be available during fluid level measurements.

- photoionization detector (PID)
- appropriate health and safety equipment, as specified in the site Health and Safety Plan (HASP)

- laboratory-type soap (Alconox or equivalent), methanol/hexane rinse, potable water, distilled water, and/or other equipment that may be needed for decontamination purposes
- electronic NAPL-water interface probe
- electronic water-level meter
- 6-foot engineer's rule
- portable containers
- plastic sheeting
- field logbook and/or personal digital assistant (PDA)
- indelible ink pen
- digital camera (optional, if allowed by site policy)

IV. Cautions

Electronic water-level probes and NAPL-water interface probes can sometimes produce false-positive readings. For example, if the inside surface of the well has condensation above the water level, then an electronic water-level probe may produce a signal by contacting the side of the well rather than the true water level in the well. In addition, NAPL-water interface probes can sometimes indicate false positive signals when contacting a sediment layer on the bottom of a well. In contrast, a NAPL-water interface probe may produce a false-negative (no signal) if a floating layer of non-aqueous phase liquid (NAPL) is too thin, such as a film or sheen. To produce reliable data, the electronic water level probe and/or interface probe should be raised and lowered several times at the approximate depth where the instrument produces a tone indicating a fluid interface to verify consistent, repeatable results. In addition, a bottom-loading bailer should periodically be used to check for the presence of NAPLs rather than relying solely on the NAPL-water interface probe.

The graduated tape or cable with depth markings is designed to indicate the depth of the electronic sensor that detects the fluid interface, but not the depth of the bottom of the instrument. When using these devices to measure the total well depth, the additional length of the instrument below the electronic sensor must be added to the apparent well depth reading, as observed on the tape or cable of the instrument, to obtain the true total depth of the well. If the depth markings on the tape or cable are

worn or otherwise difficult to read, extra care must be taken in obtaining the depth readings.

V. Health and Safety Considerations

The HASP will be followed, as appropriate, to ensure the safety of field personnel. Access to wells may expose field personnel to hazardous materials such as contaminated groundwater or NAPL. Other potential hazards include stinging insects that may inhabit well heads, other biologic hazards, and potentially the use of sharp cutting tools (scissors, knife). Appropriate personal protective equipment (PPE) will be worn during these activities. Field personnel will thoroughly review client-specific health and safety requirements, which may preclude the use of fixed/folding-blade knives.

VI. Procedure

Calibration Procedures

If there is any uncertainty regarding the accuracy of the tape or cable associated with the electronic water-level probe or NAPL-water interface probe, it should be checked versus a standard length prior to use to assess if the tape or cable above the meter has been correctly calibrated by the manufacturer, and to identify evidence of tape or cable stretching, etc.

- Measure the lengths between markers on the cable with a 6-foot engineer's rule
 or a fiberglass engineer's tape. The tape or cable associated with the electronic
 water-level probe or NAPL-water interface probe should be checked for the
 length corresponding to the deepest total well depth to be monitored during the
 data collection event.
- 2. If the length designations on the tape or cable associated with the electronic water-level probe or NAPL-water interface probe are found to be incorrect, the probe will not be used until it is repaired by the manufacturer.
- 3. Record verification of this calibration process in field logbook or PDA.

Measurement Procedures

The detailed procedure for obtaining fluid level depth measurements is as follows. Field notes on logs will be treated as secured documentation and indelible ink will be used. As a general rule, the order of measuring should proceed from the least to most contaminated monitoring wells, based on available data.

- 1. Identify site and well number in field logbook using indelible ink, along with date, time, personnel, and weather conditions.
- Field personnel will avoid activities that may introduce contamination into monitoring wells. Activities such as dispensing gasoline into vehicles or generators should be accomplished well in advance of obtaining field measurements.
- 3. Don PPE as required by the HASP...
- 4. Clean the NAPL/water interface probe and cable in accordance with the appropriate cleaning procedures. Down-hole instrumentation should be cleaned prior to obtaining readings at the first monitoring well and upon completion of readings at each well.
- 5. Clean the NAPL/water level interface probe and cable with a soapy (Alconox) water rinse followed by a solvent rinse (if appropriate based on site-specific constituents of concern) an analyte-free water rinse Contain rinse water in a portable container that will be transferred to an on-site container.
- 6. Put clean plastic sheeting on the ground next to the well.
- 7. Unlock and open the well cover while standing upwind from the well. Place the well cap on the plastic sheeting.
- 8. Locate a measuring reference point on the well casing. If one is not found, initiate a reference point at the highest discernable point on the inner casing (or outer if an inner casing is not present) by notching with a hacksaw, or using an indelible marker. All down-hole measurements will be taken from the reference point established at each well on the inner casing (on the outer only if an inner casing is not present).
- 9. Measure to the nearest hundredth of a foot and record the height of the inner and outer casings (from reference point, as appropriate) to ground level.
- 10. Record the inside diameter of the well casing in the field log.
- 11. If an electronic water level probe is used to measure the water level, lower the probe until it emits a signal (tone and or light) indicating the top of the water surface. Gently raise and lower the instrument through this interface to confirm its depth. Measure and record the depth of the water surface, and the total well depth, to the nearest hundredth of a foot from the reference point at the top of

the well. Lower the probe to the bottom of the well to obtain a total depth measurement.

- 12. If a NAPL/water interface probe is being used to measure the depth and thickness of NAPL, lower the instrument until it emits a signal (tone and or light) indicating whether LNAPL is present. Continue to lower the NAPL/water level interface probe until it indicates the top of water. Lower the probe to the bottom of the well to obtain a total depth measurement. Note also of the depth indicating the bottom of water and top of DNAPL layer, if any, based on the signal emitted by the interface probe. At each fluid interface, gently raise and lower the instrument through each the interface to confirm its depth. Measure to the nearest hundredth of a foot and record the depth of each fluid interface, and the total well depth, from the reference point.
- 13. Clean the NAPL/water interface probe and cable in accordance with the appropriate cleaning procedures.
- 14. If using a bailer to confirm the presence/absence of NAPL, the bailer should either have been previously dedicated to the well, or be a new previously unused bailer.
- 15. Compare the depth of the well to previous records, and note any discrepancy.
- 16. Lock the well when all activities are completed.

VII. Waste Management

Decontamination fluids, PPE, and other disposable equipment will be properly stored on site in labeled containers and disposed of properly. Be certain that waste containers are properly labeled and documented in the field log book. Review appropriate waste management SOPs, which may be state- or client-specific.

VIII. Data Recording and Management

Fluid level measurement data will be recorded legibly on "write-in-the-rain" field notebook in indelible pen and/or a PDA. Field situations such as apparent well damage or suspected tampering, or other observations of conditions that may result in compromised data collection will be photographically documented where practicable.

IX. Quality Assurance

As described in the detailed procedure, the electronic water-level meter and/or NAPL-water interface probe will be calibrated prior to use versus an engineer's rule to ensure accurate length demarcations on the tape or cable. Fluid interface measurements will be verified by gently raising and lowering the instrument through each interface to confirm repeatable results.

X. References

No literature references are required for this SOP.



Rev. #: 1

Rev Date: December 29, 2005



Rev. #: 1 | Rev Date: December 29, 2005

Approval Signatures

Prepared by:		Date:
Deviewed by		Date:
	(Technical Expert)	
Reviewed by:	(Project Manager)	Date:
	(i reject manager)	



Rev. #: 1 | Rev Date: December 29, 2005

I. Scope and Application

Manual light non-aqueous phase liquid (LNAPL) removal and absorbent sock installation is appropriate for recovery of residual LNAPL or LNAPL recovery rate testing.

Monitoring well water levels and LNAPL thickness will be used, as appropriate, to develop piezometric maps and evaluate LNAPL extent migration or extent reduction. The water levels and LNAPL thickness will be obtained using an oil/water interface probe. The Operation and Maintenance (O&M) Manual for the probe should be reviewed prior to commencement of work for safe and accurate operation. LNAPL will be removed using either a bailer or absorbent sock. LNAPL and associated disposable personal protection equipment (PPE)/ materials will be stored in separate drums, labeled, and properly disposed at a licensed facility. Procedures for determining water levels and LNAPL thicknesses in monitoring wells and LNAPL removal are presented in this Standard Operating Procedure (SOP).

II. Personnel Qualifications

LNAPL removal, monitoring well water level, and LNAPL level measurements will be performed by persons trained in the proper usage of water-level measurement equipment and LNAPL handling under the guidance of an experienced field geologist, engineer, or technician.

III. Equipment List

- oil/water interface probe and O&M Manual;
- photoionization detector (PID) to measure headspace vapors;
- bailer;
- bucket;
- 15-foot length section of 1½ "outside diameter (OD) Schedule 40 PVC pipe;
- 15-foot length section of 3/4" OD Schedule 40 PVC pipe;
- well opening tools (large screwdriver, small brass lock, socket set, hammer);
- well construction information for monitoring wells;

ARCADIS

(Bailing or Installation of Absorbent Socks)

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- health and safety equipment, as required by the site Health and Safety Plan (HASP), task Job Safety Analysis (JSA), and Journey Management Plan (JMP);
- cleaning brushes;
- plastic sheeting;
- measuring tape;
- non-phosphate soap;
- distilled/deionized water;
- solvent cleaner (e.g., CitraSolv™);
- watch (to record time and day);
- field notebook;
- absorbent pads;
- absorbent socks;
- appropriate LNAPL and/or absorbent material disposable containers;
- LNAPL thickness/water-level measurement and manual LNAPL removal log (LNAPL removal log; Attachment A);
- monitoring well keys; and
- tape (to loosely seal end of PVC pipe) (Note: do not use electrical tape).

IV. **Cautions**

Handle and store LNAPL with care to avoid spills. Use the absorbent material when handling equipment that contains or has been coated with LNAPL. Monitoring wells with viscous LNAPL (tar-like LNAPL) are extremely difficult to remove and measure depth to water. Do not use electrical tape, as this tape may contaminate water samples.

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V. Health and Safety Considerations

Field activities will be performed in accordance with the site-specific HASP, JSA, and JMP, copies of which will be present on-site during such activities.

VI. Procedures

Groundwater and LNAPL Elevation Measurements

- 1. Identify site and well number on the LNAPL removal log (Attachment A), along with other appropriate information collected during water-level measurement.
- 2. Don PPE as required by the HASP.
- 3. Clean the oil/water interface probe and cable in accordance with the appropriate cleaning procedures.
- 4. Place a piece of plastic sheeting and absorbent pads adjacent to the well to use as a clean work area. Cut a hole in the center of sheeting and place the sheet around the well.
- 5. If LNAPL or absorbent sock is present in the well (based on a review historical data, if available), place enough absorbent pads on the plastic sheet beside the well to absorb oil that may be present when the absorbent sock and oil/water interface probe is removed from the well.
- 6. Unlock and open the well cover while standing upwind of the well. Remove well cap. Insert PID probe approximately 4 to 6 inches into the casing of the well headspace and cover with gloved hand. Record the PID reading on the field log. If the well headspace reading is less than 5 PID units, proceed; if the well headspace reading is greater than 5 PID units, screen the air within the breathing zone. If the PID reading in the breathing zone is below 5 PID units, proceed. If the PID reading is above 5 PID units, move upwind from the well for 5 minutes to allow the volatiles to dissipate. Repeat the breathing zone test. If the reading is still above 5 PID units, don appropriate respiratory protection in accordance with the requirements of the HASP. Record all PID readings.
- 7. Locate a measuring reference point on the well casing. If one is not found, initiate a reference point by notching the inner and outer casings with a hacksaw or by using a waterproof marker. All down-hole measurements will be taken from the reference points. The acronym "TIC" will designate the top of inner casing and the acronym "TOC" will designate the top of the outer casing. If a well has both

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inner and outer casings, use the TIC as the reference point.

Note: The following steps describe the procedures for water-level measurement and detection of immiscible layers. For wells subject to routine monitoring (e.g., monthly monitoring locations), determining the depth of the well will be performed initially and at a maximum interval of annually thereafter.

- 8. If an absorbent sock is already in the well, note the presence of the sock on the log, remove the absorbent sock, and make a qualitative estimate of the volume of LNAPL present in the absorbent sock. Proceed to Step 9 after the well has equilibrated (wait up to 1 hour before measuring LNAPL thickness and water level).
- 9. Measure to the nearest 0.01 foot and record the height of the inner and outer casings from reference point to ground level.
- 10. Record the inside diameter of the well casing on the field log.
- 11. At all locations, except those monitoring wells containing viscous LNAPL (see note below), lower the oil/water interface probe into the well to determine the existence of any light immiscible layer. Carefully record the depths of the air/light-phase and light-phase/water interfaces (to the nearest 0.01 foot) to determine the thickness of the light-phase immiscible layer (if present). If no light-phase immiscible layer is present, record the depth of the air/water interface.

Note: Use extreme caution when gauging monitoring wells with viscous LNAPL. The viscous nature of LNAPL is difficult to remove. Instead, mark a 10-foot section of PVC pipe at 1-foot intervals to estimate location of the pipe within the well and slowly lower pipe into the well until reaching the fluid/air interface. Mark the PVC pipe at the TIC and slowly remove. Measure difference between the uppermost limit of LNAPL on the pipe (if present) and the mark made at the TIC. The difference is the top of LNAPL. To get depth to water, use two sections of PVC pipe that when put one inside the other will also fit down the 2-inch diameter well (i.e., 3/4" diameter inside a 11/2" diameter pipe with the 3/4" pipe). Make sure that the 3/4" pipe is at least 6 inches longer than the 1½" pipe). Tape the bottom of the two pipes such that the tape can be easily removed, but can be lowered through the LNAPL/water interface. Slowly lower the two pipes into the well until reaching the bottom (~15' below ground surface [bgs]). Push the 3/4" pipe through the 11/2" pipe to remove the tape and allow groundwater to enter pipes. Remove the 3/4" diameter pipe and allow the water level to equilibrate inside the 1½" pipe (wait up to 1 hour before measuring).

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Measure and record the depth of the air/water interface inside the $1\frac{1}{2}$ " pipe using the oil/water interface probe (to the nearest 0.01 foot) relative to the TIC.

- 12. If greater that ½ inch of LNAPL is measured, remove LNAPL with bailer and reinstall absorbent material (see procedures below).
- 13. If less than ½ inch, remove LNAPL with bailer and measure thickness during subsequent gauging event (see procedure below).

LNAPL Removal with Bailer

- a. Remove the bailer from the plastic covering and attach a string or rope to the top of the bailer.
- Gently lower the bailer into the LNAPL. To avoid removing groundwater, do not lower the bailer deeper than the expected LNAPL/groundwater interface. Use care not to stir up the LNAPL and groundwater.
- Pour the LNAPL into a bucket or container for measurement and repeat until the LNAPL thickness has been reduced to less than approximately 0.1 foot.
- Record the volume of LNAPL removed in the field notebook and transfer LNAPL to a labeled drum or container for disposal (see Section VII).

Installation of Absorbent Socks for LNAPL Removal

- a. Tie one end of the sock to a rope and lower into the monitoring well.
- Lower the sock such that the bottom of the sock is at the LNAPL/groundwater interface. In monitoring wells that are affected by tidal fluxes, allow extra length in the rope for groundwater elevation fluxes.
- c. Tie the end of the rope to the top of the well casing.
- d. Replace the absorbent sock when the sock becomes saturated, dispose of the socks in a labeled drum or container, stage drum at an approved location, and arrange for proper off-site disposal.

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- 14. Between wells, when obtaining water-level/oil thickness measurements at more than one location, clean the instrument with a non-phosphate soap and water wash followed by a distilled/deionized water rinse. Use an appropriate solvent rinse, if necessary, to remove oil deposits.
- 15. Close and secure the monitoring wells and LNAPL disposal containers when all activities are completed.
- Collect all PPE and other wastes generated for disposal. Separately containerize all PPE and disposable supplies from LNAPL (see Section VII).

VII. Waste Management

Materials generated during water-level/oil thickness measurement and LNAPL removal procedures, including disposable equipment (including absorbent pads and socks) and LNAPL, will be containerized in appropriate labeled containers or drums. Solids, such at absorbents, are to be stored separately from liquids. LNAPL from all wells may be containerized in one drum. Containerized waste labeling, storage locating procedures are detailed in a separate SOP.

VIII. Data Recording and Management

The supervising geologist/technician will be responsible for documenting site conditions and field activities using a daily field log or bound field notebook to record all relevant information in a clear and concise format which will include the following (at a minimum):

- start and finish times of water and LNAPL measurement events:
- name and location of project;
- project number, client, and site location;
- depth to water and LNAPL;
- volume and description of LNAPL removed;
- number and volume of on-site drums; and
- weather conditions.

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Water-level and LNAPL measurements should be recorded on the LNAPL removal log (Attachment A). All records are to be sent to the Project Manager for review and original records are to be stored in the project files.

IX. Quality Assurance

Groundwater elevation data will be compared to historical data and if groundwater elevations are not within historical ranges, the groundwater elevation data will be confirmed by additional field measurements.

X. References

[Click here and enter Text]

(Bailing or Installation of Absorbent Socks) Rev. #: 1 | Rev Date: December 29, 2005

ATTACHMENT A

NAME OF SITE CITY, STATE

LNAPL THICKNESS/WATER-LEVEL MEASUREMENT AND MANUAL LNAPL REMOVAL LOG

Well ID	MW-	MW-	MW-	MW-	MW-
Date					
Inside Diameter of Well (inches)					
Depth to LNAPL (feet)					
Depth to Water (feet)					
LNAPL Recovered from Absorbent Pad (gallons)					
LNAPL Bailed (gallons)					
Total LNAPL Recovered					
Absorbent Replaced? (yes/no)					
Notes					

Ν	Ю	te	
_		_	

¹ gallon = 3,785 milliliters



Chain-of-Custody, Handling, Packing and Shipping

Rev. #: 2

Rev Date: March 6, 2009

Approval Signatures

Prepared by: August Scaron Koll	Date:	3/6/09
Reviewed by: Jane Kennedy(Technical Expert)	Date:	3/6/09



I. Scope and Application

This Standard Operating Procedure (SOP) describes the chain-of-custody, handling, packing, and shipping procedures for the management of samples to decrease the potential for cross-contamination, tampering, mis-identification, and breakage, and to insure that samples are maintained in a controlled environment from the time of collection until receipt by the analytical laboratory.

II. Personnel Qualifications

ARCADIS field sampling personnel will have current health and safety training, including 40-hour HAZWOPER training, Department of Transportation (DOT) training, site supervisor training, and site-specific training, as needed. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and possess the skills and experience necessary to successfully complete the desired field work.

III. Equipment List

The following list provides materials that may be required for each project. Project documents and sample collection requirements should be reviewed prior to initiating field operations:

- indelible ink pens (black or blue);
- polyethylene bags (resealable-type);
- clear packing tape, strapping tape, duct tape;
- chain of custody
- DOT shipping forms, as applicable
- custody seals or tape;
- appropriate sample containers and labels,;
- insulated coolers of adequate size for samples and sufficient ice to maintain
 4°C during collection and transfer of samples;
- wet ice;
- cushioning and absorbent material (i.e., bubble wrap or bags);

- temperature blank
- sample return shipping papers and addresses; and
- field notebook.

IV. Cautions

Review project requirements and select appropriate supplies prior to field mobilization.

Insure that appropriate sample containers with applicable preservatives, coolers, and packing material have been supplied by the laboratory.

Understand the offsite transfer requirements for the facility at which samples are collected.

If overnight courier service is required schedule pick-up or know where the drop-off service center is located and the hours of operation. Prior to using air transportation, confirm air shipment is acceptable under DOT and International Air Transport Association (IATA) regulation

Schedule pick-up time for laboratory courier or know location of laboratory/service center and hours of operation.

Understand DOT and IATA shipping requirements and evaluate dangerous goods shipping regulations relative to the samples being collected (i.e. complete an ARCADIS shipping determination). Review the ARCADIS SOPs for shipping, packaging and labeling of dangerous goods. Potential samples requiring compliance with this DOT regulation include:

- Methanol preservation for Volatile Organic Compounds in soil samples
- Non-aqueous phase liquids (NAPL)

V. Health and Safety Considerations

Follow health and safety procedures outlined in the project/site Health and Safety Plan (HASP).



Use caution and appropriate cut resistant gloves when tightening lids to 40 mL vials. These vials can break while tightening and can lacerate hand. Amber vials (thinner glass) are more prone to breakage.

Some sample containers contain preservatives.

- The preservatives must be retained in the sample container and should in no instance be rinsed out.
- Preservatives may be corrosive and standard care should be exercised to reduce potential contact to personnel skin or clothing. Follow project safety procedures if spillage is observed.
- If sample container caps are broken discard the bottle. Do not use for sample collection.

VI. Procedure

Chain-of-Custody Procedures

- Prior to collecting samples, complete the chain-of-custody record header information by filling in the project number, project name, and the name(s) of the sampling technician(s) and other relevant project information. Attachment 1 provides an example chain-o- custody record
- Chain-of-custody information MUST be printed legibly using indelible ink (black or blue).
- 3. After sample collection, enter the individual sample information on the chain-of-custody:
 - a. Sample Identification indicates the well number or soil location that the sample was collected from. Appropriate values for this field include well locations, grid points, or soil boring identification numbers (e.g., MW-3, X-20, SB-30). When the depth interval is included, the complete sample ID would be "SB-30 (0.5-1.0) where the depth interval is in feet. Please note it is very important that the use of hyphens in sample names and depth units (i.e., feet or inches) remain consistent for all samples entered on the chain-of-custody form. DO NOT use the apostrophe or quotes in the sample ID. Sample names may also use the abbreviations "FB," "TB," and "DUP" as prefixes or suffixes to indicate that the sample is a field blank, trip blank, or field duplicate, respectively. NOTE: The sample

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nomenclature may be dictated by the project database and require unique identification for each sample collected for the project. Consult the project data management plan for additional information regarding sample identification.

- b. List the date of sample collection. The date format to be followed should be mm/dd/yy (e.g., 03/07/09) or mm/dd/yyyy (e.g. 03/07/2009).
- c. List the time that the sample was collected. The time value should be presented using military format. For example, 3:15 P.M. should be entered as 15:15.
- d. The composite field should be checked if the sample is a composite over a period of time or from several different locations and mixed prior to placing in sample containers.
- e. The "Grab". field should be marked with an "X" if the sample was collected as an individual grab sample. (e.g. monitoring well sample or soil interval).
- f. Any sample preservation should be noted.
- g. The analytical parameters that the samples are being analyzed for should be written legibly on the diagonal lines. As much detail as possible should be presented to allow the analytical laboratory to properly analyze the samples. For example, polychlorinated biphenyl (PCB) analyses may be represented by entering "PCBs" or "Method 8082." Multiple methods and/or analytical parameters may be combined for each column (e.g., PCBs/VOCs/SVOCs or 8082/8260/8270). These columns should also be used to present project-specific parameter lists (e.g., Appendix IX+3 target analyte list. Each sample that requires a particular parameter analysis will be identified by placing the number of containers in the appropriate analytical parameter column. For metals in particular, indicate which metals are required.
- h. Number of containers for each method requested. This information may be included under the parameter or as a total for the sample based on the chain of custody form used.
- i. Note which samples should be used for site specific matrix spikes.
- j. Indicate any special project requirements.

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- k. Indicate turnaround time required.
- I. Provide contact name and phone number in the event that problems are encountered when samples are received at the laboratory.
- m. If available attach the Laboratory Task Order or Work Authorization forms
- n. The remarks field should be used to communicate special analytical requirements to the laboratory. These requirements may be on a per sample basis such as "extract and hold sample until notified," or may be used to inform the laboratory of special reporting requirements for the entire sample delivery group (SDG). Reporting requirements that should be specified in the remarks column include: 1) turnaround time; 2) contact and address where data reports should be sent; 3) name of laboratory project manager; and 4) type of sample preservation used.
- The "Relinquished By" field should contain the signature of the sampling technician who relinquished custody of the samples to the shipping courier or the analytical laboratory.
- p. The "Date" field following the signature block indicates the date the samples were relinquished. The date format should be mm/dd/yyyy (e.g., 03/07/2005).
- q. The "Time" field following the signature block indicates the time that the samples were relinquished. The time value should be presented using military format. For example, 3:15 P.M. should be entered as 15:15.
- r. The "Received By" section is signed by sample courier or laboratory representative who received the samples from the sampling technician or it is signed upon laboratory receipt from the overnight courier service.
- 3. Complete as many chain-of-custody forms as necessary to properly document the collection and transfer of the samples to the analytical laboratory.
- 4. Upon completing the chain-of-custody forms, forward two copies to the analytical laboratory and retain one copy for the field records.
- 5. If electronic chain-of-custody forms are utilized, sign the form and make 1 copy for ARCADIS internal records and forward the original with the samples to the laboratory.

Handling Procedures

- 1. After completing the sample collection procedures, record the following information in the field notebook with indelible ink:
 - · project number and site name;
 - sample identification code and other sample identification information, if appropriate;
 - sampling method;
 - date;
 - name of sampler(s);
 - time;
 - location (project reference);
 - location of field duplicates and both sample identifications;
 - locations that field QC samples were collected including equipment blanks, field blanks and additional sample volume for matrix spikes; and
 - · any comments.
- 2. Complete the sample label with the following information in indelible ink:
 - sample type (e.g., surface water);
 - sample identification code and other sample identification information, if applicable;
 - analysis required;
 - date;
 - time sampled; and
 - initials of sampling personnel;

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- sample matrix; and
- preservative added, if applicable.
- Cover the label with clear packing tape to secure the label onto the container and to protect the label from liquid.
- 4. Confirm that all caps on the sample containers are secure and tightly closed.
- 5. In some instances it may be necessary to wrap the sample container cap with clear packing tape to prevent it from becoming loose.
- 6. For some projects individual custody seals may be required. Custody seal evidence tape may be placed on the shipping container or they may be placed on each sample container such that the cooler or cap cannot be opened without breaking the custody seal. The custody seal should be initialed and dated prior to relinquishing the samples.

Packing Procedures

Following collection, samples must be placed on wet ice to initiate cooling to 4°C immediately. Retain samples on ice until ready to pack for shipment to the laboratory.

- 1. Secure the outside and inside of the drain plug at the bottom of the cooler being used for sample transport with "Duct" tape.
- 2. Place a new large heavy duty plastic garbage bag inside each cooler
- 3. Place each sample bottle wrapped in bubble wrap inside the garbage bag. VOC vials may be grouped by sample in individual resealable plastic bags). If a cooler temperature blank is supplied by the laboratory, it should be packaged following the same procedures as the samples. If the laboratory did not include a temperature blank, do not add one. Place 1 to 2 inches of cushioning material (i.e., vermiculite) at the bottom of the cooler.
- 4. Place the sealed sample containers upright in the cooler.
- 5. Package ice in large resealable plastic bags and place inside the large garbage bag in the cooler. Samples placed on ice will be cooled to and maintained at a temperature of approximately 4°C.



- Fill the remaining space in the cooler with cushioning material such as bubble wrap. The cooler must be securely packed and cushioned in an upright position and be surrounded (Note: to comply with 49 CFR 173.4, filled cooler must not exceed 64 pounds).
- 7. Place the completed chain-of-custody record(s) in a large resealable bag and tape the bag to the inside of the cooler lid.
- 8. Close the lid of the cooler and fasten with packing tape.
- 9. Wrap strapping tape around both ends of the cooler.
- 10. Mark the cooler on the outside with the following information: shipping address, return address, "Fragile, Handle with Care" labels on the top and on one side, and arrows indicating "This Side Up" on two adjacent sides.
- 11. Place custody seal evidence tape over front right and back left of the cooler lid, initial and date, then cover with clear plastic tape.

Note: Procedure numbers 2, 3, 5, and 6 may be modified in cases where laboratories provide customized shipping coolers. These cooler types are designed so the sample bottles and ice packs fit snugly within preformed styrofoam cushioning and insulating packing material.

Shipping Procedures

- 1. All samples will be delivered by an express carrier within 48 hours of sample collection. Alternatively, samples may be delivered directly to the laboratory or laboratory service center or a laboratory courier may be used for sample pickup.
- If parameters with short holding times are required (e.g., VOCs [EnCore™
 Sampler], nitrate, nitrite, ortho-phosphate and BOD), sampling personnel will
 take precautions to ship or deliver samples to the laboratory so that the holding
 times will not be exceeded.
- 3. Samples must be maintained at 4°C±2°C until shipment and through receipt at the laboratory
- 4. All shipments must be in accordance with DOT regulations and ARCADIS dangerous goods shipping SOPs.



5. When the samples are received by the laboratory, laboratory personnel will complete the chain-of-custody by recording the date and time of receipt of samples, measuring and recording the internal temperature of the shipping container, and checking the sample identification numbers on the containers to ensure they correspond with the chain-of-custody forms.

Any deviations between the chain-of-custody and the sample containers, broken containers, or temperature excursions will be communicated to ARCADIS immediately by the laboratory.

VII. Waste Management

Not applicable

VIII. Data Recording and Management

Chain-of-custody records will be transmitted to the ARCADIS PM or designee at the end of each day unless otherwise directed by the ARCADIS PM. The sampling team leader retains copies of the chain-of-custody forms for filing in . the project file. Record retention shall be in accordance with project requirements.

IX. Quality Assurance

Chain-of-custody forms will be legibly completed in accordance with the applicable project documents such as Sampling and Analysis Plan (SAP), Quality Assurance Project Plan (QAPP), Work Plan, or other project guidance documents. A copy of the completed chain-of-custody form will be sent to the ARCADIS Project Manager or designee for review.

X. References

Not Applicable



ID#

SOP: Chain-of-Custody, Handling, Packing and Shipping

CHAIN OF CUSTODY & LABORATORY

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Attachment 1

Infrastructure, environment, facilities						ALYSI						age	of	Lab W	ork Order#	
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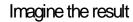
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Distribution:

WHITE - Laboratory returns with results

YELLOW - Lab copy

PINK - Retained by BBL





Photoionization Detector Air Monitoring and Field Screening

Rev. #: 1

Rev Date: November 8, 2009

SOP: Photoionization Detector Air Monitoring and Field Screening

Rev. #: 0 | Rev Date: July 28, 2003

Approval Signatures

Chatgeto (Tale

Prepared by: (the late) Maureen Geisser Date: July 28, 2003

Reviewed/revised by: Christopher C. Lutes Date: November 8, 2009

(Technical Expert)



Rev. #: 0 | Rev Date: July 28, 2003

I. Scope and Application

Field screening with a photoionization detector (PID), such as an HNu[™], Photovac[™], MicroTIP[™], or MiniRAE[™], is a procedure to measure relative concentrations of volatile organic compounds (VOCs) and other compounds. Characteristics of the PID are presented in Attachment 1 and the compounds a PID can detect are presented in Attachment 2. Field screening will frequently be conducted on the following:

- Work area air to assess exposure to on-site workers of air contaminants via the air pathway;
- Well headspaces as a precautionary measure each time the well cover is opened; and
- Headspace of soil samples to assess the relative concentration of volatile organics in the sample or to select particular intervals for off-site analysis for VOCs.

II. Personnel Qualifications

Personnel performing this method should be familiar with the basic principles of quantitative analytical chemistry (such as calibration) and familiar with the particular operation of the instrument to be used.

III. Equipment List

The following materials, as required, shall be available while performing PID field screening:

- personal protective equipment (PPE), as required by the site Health and Safety Plan (HASP);
- PID and operating manual;
- PID extra battery pack and battery charger;
- calibration canisters for the PID;
- sample jars;
- Q-tips;

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- aluminum foil;
- field calibration log (attached); and
- field notebook.

IV. Cautions

PIDs are sensitive to moisture and may not function under high humidity. PIDs cannot be used to indicate oxygen deficiency or combustible gases.

V. Health and Safety Considerations

Since the PIDs cannot detect all of the chemicals that may be present at a sample location, a zero reading on either instrument does not necessarily signify the absence of air contaminants. PIDs cannot be used as an indicator for oxygen deficiency.

VI. Procedure (Note these procedures were written particular to one specific instrument model, therefore please also refer to your owners manual. Hhowever the general principles – such as always measuring both a zero and span gas after an instrument adjustment/at the beginning of the analytical day, after four hours of testing and again at the end of an analytical day can be applied to all instruments.)

PID Calibration

PID field instruments will be calibrated and operated to yield "total organic vapor" in parts per million (ppm) (v/v) relative to benzene or isobutylene (or equivalent). Operation, maintenance, and calibration shall be performed in accordance with the manufacturer's instructions and entered on the PID calibration and maintenance log (Attachment 3).

- 1. Don PPE, as required by the HASP.
- 2. Perform a BATTERY CHECK. Turn the FUNCTION switch to the BATTERY CHECK position. Check that the indicator is within or beyond the green battery arc. If battery is low, the battery must be charged before calibration.
- 3. Allow the instrument to warm up, then calibrate the PID. If equipped, turn the FUNCTION switch to the STANDBY position and rotate the ZERO

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POTENTIOMETER until the meter reads zero with the instrument sampling clean air. Wait 15 to 20 seconds to confirm the adjustment. If unstable, readjust. If equipped, check to see that the SPAN POTENTIOMETER is adjusted for the probe being used (e.g., 9.8 for 10.2 electron volts [eV]). Set the FUNCTION switch to the desired ppm range (0-20, 0-200, or 0-2,000). A violet glow from the ultraviolet (UV) source should be visible at the sample inlet of the probe/sensor unit.

- 4. Listen for the fan operation to verify fan function.
- 5. Connect one end of the sampling hose to the calibration canister regulator outlet and the other end to the sampling probe of the PID. Crack the regulator valve and take a reading after 5 to 10 seconds. Adjust the span potentiometer to produce the concentration listed on the span gas cylinder. Record appropriate information on a PID Calibration and Maintenance Log (Attachment 3, or equivalent).
- 6. If so equipped, set the alarm at desired level.
- 7. Recheck the zero with fresh/clean air
- 8. Always recheck both zero and span after making any instrment adjustment, after four hours of screenign work and again after sample analysis.

Work Area Air Monitoring

- 1. Measure and record the background PID reading.
- 2. Measure and record the breathing space reading.

Well Headspace Screening

- 1. Measure and record the background PID reading.
- 2. Unlock and open the well cover while standing upwind of the well.
- 3. Remove the well cap.
- 4. Place the PID probe approximately 6 inches above the top of the casing.
- 5. Record all PID readings and proceed in accordance with the HASP.



Field Screening Procedures

Soil samples will be field screened upon collection with the PID for a relative measure of the total volatile organic concentration. The following steps define the PID field screening procedures.

- Half-fill two clean glass jars with the sample (if sufficient quantities of soil are available) to be analyzed. Quickly cover each open top with one or two sheets of clean aluminum foil and subsequently apply screw caps to tightly seal the jars. Sixteen-ounce (approximately 500 mL) soil or "mason" type jars are preferred; jars less than 8 ounces (approximately 250 mL) total capacity may not be used.
- Allow headspace development for at least 10 minutes. Vigorously shake jars for 15 seconds at both the beginning and end of the headspace development period. Where ambient temperatures are below 32°F (0°C), headspace development should be within a heated building.
- Subsequent to headspace development, remove screw lid to expose the foil seal. Quickly puncture foil seal with instrument sampling probe, to a point about one-half of the headspace depth. Exercise care to avoid contact with water droplets or soil particulates.
- 4. Following probe insertion through foil seal, record the highest meter response for each sample as the jar headspace concentration. Using the foil seal/probe insertion method, maximum response should occur between 2 and 5 seconds. Erratic meter response may occur at high organic vapor concentrations or conditions of elevated headspace moisture, in which case headspace data should be recorded and erratic meter response noted.
- 5. The headspace screening data from both jar samples should be recorded and compared; generally, replicate values should be consistent to plus or minus 20%. It should be noted that in some cases (e.g., 6-inch increment soil borings), sufficient sample quantities may not be available to perform duplicate screenings. One screening will be considered sufficient for this case.
- 6. PID field instruments will be operated and calibrated to yield "total organic vapors" in ppm (v/v) as benzene. PID instruments must be operated with at least a 10.0 eV (+) lamp source. Operation, maintenance, and calibration will be performed in accordance with the manufacturer's specifications presented in Attachment 12-1. For jar headspace analysis, instrument calibration will be checked/adjusted at least twice per day, at the beginning and end of each day

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of use. Calibration will exceed twice per day if conditions and/or manufacturer's specifications dictate.

Instrumentation with digital (LED/LCD) displays may not be able to discern
maximum headspace response unless equipped with a "maximum hold" feature
or strip-chart recorder.

VII. Waste Management

Do not dispose canisters of compressed gas, if there is still compressed gas in the canister. Return the canister to the manufactuer for proper disposal.

VIII. Data Recording and Management

Measurements will be record in the field notebook or boring logs at the time of measurement with notation of date, time, location, depth (if applicable), and item monitored. If a data memory is available, readings will be downloaded from the unit upon access to a computer with software to retrieve the data.

IX. Quality Assurance

After each use, the readout unit should be wiped down with a clean cloth or paper towel.

For a HNu, the UV light source window and ionization chamber should be cleaned once a month in the following manner:

- 1. With the PID off, disconnect the sensor/probe from the unit.
- 2. Remove the exhaust screw, grasp the end cap in one hand and the probe shell in the other, and pull apart.
- 3. Loosen the screws on top of the end cap and separate the end cap and ion chamber from the lamp and lamp housing.
- 4. Tilt the lamp housing with one hand over the opening so that the lamp slides out into your hand.
- Clean the lamp with lens paper and HNu cleaning compound (except 11.7 eV).
 For the 11.7 eV lamp, use a chlorinated organic solvent.

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- 6. Clean the ion chamber using methanol on a Q-tip and then dry gently at 50°C to 60°C for 30 minutes.
- 7. Following cleaning, reassemble by first sliding the lamp back into the lamp housing. Place ion chamber on top of the housing, making sure the contacts are properly aligned.
- 8. Place the end cap on top of the ion chamber and replace the two screws (tighten the screws only enough to seal the o-ring).
- 9. Line up the pins on the base of the lamp housing with pins inside the probe shell and slide the housing assembly into the shell.

X. References

Denahan, S.A. et. all "Relationships Between Chemical Screening Methodologies for Petroleum Contaminated Soils: Theory and Practice" *Chapter 5 In Principles and Practices for Petroleum Contaminated Soils*, E.J. Calabrese and P.T. Kostecki Eds., Lewis Publishers 1993.

Fitzgerald, J. "Onsite Analytical Screening of Gasoline Contaminated Media Using a Jar Headspace Procedure" Chapter 4 in *Principles and Practices for Petroleum Contaminated Soils*, E.J. Calabrese and P.T. Kostecki Eds., Lewis Publishers 1993.

SOP: Photoionization Detector Air Monitoring and Field Screening

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ATTACHMENT 1

Characteristics of the Photoionization Detector (PID)

I. Introduction

PIDs are used in the field to detect a variety of compounds in air. PIDs can be used to detect leaks of volatile substances in drums and tanks, to determine the presence of volatile compounds in soil and water, and to make ambient air surveys. If personnel are thoroughly trained to operate the instrument and interpret the data, these PID instruments can be a valuable tool. Its use can help in deciding the level of protection to be worn, assist in determining the implementation of other safety procedures, and in determining subsequent monitoring or sampling locations.

Portable PIDs detect the concentration of organic gases, as well as a few inorganic gases. The basis for detection is the ionization of gaseous species. The incoming gas molecules are subjected to UV radiation, which ionizes molecules that have an ionization potential (IP) less than or equal to that rated for the UV source. Every molecule has a characteristic IP, which is the energy required to remove an electron from the molecule, thus yielding a positively charged ion and the free electron. These ions are attracted to an oppositely charged electrode, causing a current and an electric signal to the LED display. Compounds are measured on a ppm volume basis.

II. HNu PI-101 / MiniRAE or Equivalent PID

The PIDs detect the concentration of organic gases, as well as a few inorganic gases. The basis for detection is the ionization of gaseous species. The incoming gas molecules are subjected to UV radiation, which is energetic enough to ionize many gaseous compounds. Each molecule is transformed into charged ion pairs, creating a current between two electrodes. Every molecule has a characteristic IP, which is the energy required to remove an electron from the molecule, yielding a positively charged ion and the free electron.

Three probes, each containing a different UV light source, are available for use with the PID. Probe energies are typically 9.5, 10.2, and 11.7 eV, respectively. All three probes detect many aromatic and large-molecule hydrocarbons. In addition, the 10.2 eV and 11.7 eV probes detect some smaller organic molecules and some halogenated hydrocarbons. The 10.2 eV probe is the most useful for environmental response work, as it is more durable than the 11.7 eV probe and detects more compounds than the 9.5 eV probe. A listing of molecules and compounds that the HNu can detect is presented in Attachment 2.

The primary PID calibration gas is either benzene or isobutylene. The span potentiometer knob is turned to 9.8 for benzene calibration. A knob setting of zero increases the sensitivity to benzene approximately 10-fold. Its lower detection limit is in the low ppm range. Additionally, response time is rapid; the dot matrix liquid crystal displays 90% of the indicated concentration within 3 seconds.

III. Limitations

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The PID instrument can monitor several vapors and gases in air. Many non-volatile liquids, toxic solids, particulates, and other toxic gases and vapors, however, cannot be detected with PIDs (such as methane). Since the PIDs cannot detect all of the chemicals that may be present at a sample location, a zero reading on either instrument does not necessarily signify the absence of air contaminants.

The PID instrument is generally not specific and their response to different compounds is relative to the calibration gases. Instrument readings may be higher or lower than the true concentration. This effect can be observed when monitoring total contaminant concentrations if several different compounds are being detected at once. In addition, the response of these instruments is not linear over the entire detection range. Therefore, care must be taken when interpreting the data. Concentrations should be reported in terms of the calibration gas and probe type.

PIDs are small, portable instruments and may not yield results as accurate as laboratory instruments. PIDs were originally designed for specific industrial applications. They are relatively easy to use and interpret when detecting total concentrations of known contaminants in air, but interpretation becomes more difficult when trying to identify the individual components of a mixture. PIDs cannot be used as an indicator for combustible gases or oxygen deficiency.

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ATTACHMENT 2

Molecules and Compounds Detected by a PID

Some Atoms and Simple Molecules

Paraffins and Cycloparaffins

	<u>IP(eV)</u>	<u>IP(eV)</u>	<u>Molecule</u>	<u>IP(eV)</u>
Н	13.595 l ₂	9.28	methane	12.98
С	11.264 HF	15.77	ethane	11.65
N	14.54 HCI	12.74	propane	11.07
0	13.614 HBr	11.62	n-butane	10.63
Si	8.149 HI	10.38	i-butane	10.57
S	10.357 SO ₂	12.34	n-pentane	10.35
F	17.42 CO ₂	13.79	i-pentane	10.32
CI	13.01 COS	11.18	2,2-dimethylpropane	10.35
Br	11.84 CS ₂	10.08	n-hexane	10.18
I	10.48 N ₂ O	12.90	2-methlypentane	10.12
H_2	15.426 NO ₂	9.78	3-methlypentane	10.08
N_2	15.580 O ₃	12.80	2,2-dimethlybutane	10.06
O_2	12.075 H ₂ O	12.59	2,3-dimethlybutane	10.02
CO	14.01 H ₂ S	10.46	n-heptane	10.08
CN	15.13 H ₂ Se	9.88	2,2,4-trimethlypentane	9.86
NO	9.25 H ₂ Te	9.14	cyclopropane	10.06
CH	11.1 HCN	3.91	cyclopentane	10.53
ОН	13.18 C ₂ N ₂	13.8	cyclohexane	9.88
F_2	15.7 NH ₃	10.15	methlycyclohexane	9.8
Cl_2	11.48 CH ₃	9.840		
Br_2	10.55 CH₄	12.98		



Alkyl Halides

Alkyl Halides

<u>IP(eV)</u>	<u>IP(eV)</u>	<u>Molecule</u>	<u>IP(eV)</u>
HCI	12.74	methyl iodide	9.54
CI_2	11.48	diiodomethane	9.34
CH ₄	12.98	ethyl iodide	9.33
methyl chloride	11.28	1-iodopropane	9.26
dichloroemethane	11.35	2-iodopropane	9.17
trichloromethane	11.42	1-iodobutane	9.21
tetrachloromethane	11.47	2-iodobutane	9.09
ethyl chloride	10.98	1-iodo-2-methylpropane	9.18
1,2-dichloroethane	11.12	2-iodo-2-methylpropane	9.02
1-chloropropane	10.82	1-iodopentane	9.19
2-chloropropane	10.78	F_2	15.7
1,2-dichloropropane	10.87	HF	15.77
1,3-dichloropropane	10.85	CFCl₃ (Freon 11)	11.77
1-chlorobutane	10.67	CF ₂ Cl ₂ (Freon 12)	12.31
2-chlorobutane	10.65	CF ₃ Cl (Freon 13)	12.91
1-chloro-2-methylpropane	10.66	CHCIF ₂ (Freon 22)	12.45
2-chloro-2-methylpropane	10.61	CFBR₃	10.67
HBr	11.62	CF_2Br_2	11.07
Br ₂	10.55	CH ₃ CF ₂ CI (Genetron 101)	11.98
methyl bromide	10.53	CFCl₂CF₂Cl	11.99
dibromomethane	10.49	CF ₃ CCl ₃ (Freon 113)	11.78
tribromomethane	10.51	CFHBrCH₂Cr	10.75
CH₂BrCl	10.77	CF₂BrCH₂Br	10.83
CHBr ₂ CI	10.59	CF₃CH₂I	10.00
ethyl bromide	10.29	n-C₃F ₇ I	10.36
1,1-dibromoethane	10.19	n-C₃F ₇ CH₂Cl	11.84
1-bromo-2-chloroethane	10.63	n-C₃F ₇ CH₂I	9.96
1-bromopropane	10.18		
2-bromopropane	10.075		
1,3-dibromopropane	10.07		
1-bromobutane	10.13		
2-bromobutane	9.98		
1-bromo-2-methylpropane	10.09		
2-bromo-2-methylpropane	9.89		
1-bromopentane	10.10		
HI	10.38		
I_2	9.28		



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Aliphatic Alcohol, Ether, Thiol, and Sulfides

<u>Molecule</u>	<u>IP(eV)</u>
H₂O	12.59
methyl alcohol	10.85
ethyl alcohol	10.48
n-propyl alcohol	10.20
i-propyl alcohol	10.16
n-butyl alcohol	10.04
dimethyl ether	10.00
diethyl ether	9.53
n-propyl ether	9.27
i-propyl ether	9.20
H ₂ S	10.46
methanethiol	9.440
ethanethiol	9.285
1-propanethiol	9.195
1-butanethiol	9.14
dimethyl sulfide	8.685
ethyl methyl sulfide	8.55
diethyl sulfide	8.430
di-n-propyl sulfide	8.30



Aliphatic Aldehydes and Ketones

Aliphatic Acids and Esters

<u>Molecule</u>	IP(eV)	<u>Molecule</u>	IP(eV)
CO ₂	13.79	CO_2	13.79
formaldehyde	10.87	formic acid	11.05
acetaldehyde	10.21	acetic acid	10.37
propionaldehyde	9.98	propionic acid	10.24
n-butyraldehyde	9.86	n-butyric acid	10.16
isobutyraldehyde	9.74	isobutyric acid	10.02
n-valeraldehyde	9.82	n-valeric acid	10.12
isovaleraldehyde	9.71	methyl formate	10.815
acrolein	10.10	ethyl formate	10.61
crotonaldehyde	9.73	n-propyl formate	10.54
benzaldehyde	9.53	n-butyl formate	10.50
acetone	9.69	isobutyl formate	10.46
methyl ethyl ketone	9.53	methyl acetate	10.27
methyl n-propyl ketone	9.39	ethyl acetate	10.11
methyl i-propyl ketone	9.32	n-propyl acetate	10.04
diethyl ketone	9.32	isopropyl acetate	9.99
methyl n-butyl ketone	9.34	n-butyl acetate	10.01
methyl i-butyl ketone	9.30	isobutyl acetate	9.97
3,3-dimethyl butanone	9.17	sec-butyl acetate	9.91
2-heptanone	9.33	methyl propionate	10.15
cyclopentanone	9.26	ethyl propionate	10.00
cyclohexanone	9.14	methyl n-butyrate	10.07
2,3-butanedione	9.23	methyl isobutyrate	9.98
2,4-pentanedione	8.87		



Aliphatic Amines and Amides

Other Aliphatic Molecules with N Atom

<u>Molecule</u>	<u>IP(eV)</u>	<u>Molecule</u>	<u>IP(eV)</u>
NH_3	10.15	nitromethane	11.08
methyl amine	8.97	nitroethane	10.88
ethyl amine	8.86	1-nitropropane	10.81
n-propyl amine	8.78	2-nitropropane	10.71
i-propyl amine	8.72	HCN	13.91
n-butyl amine	8.71	acetonitrile 12.22	
i-butyl amine	8.70	propionitrile	11.84
s-butyl amine	8.70	n-butyronitrile	11.67
t-butyl amine	8.64	acrylonitrile	10.91
dimethyl amine	8.24	3-butene-nitrile	10.39
diethyl amine	8.01	ethyl nitrate	11.22
di-n-propyl amine	7.84	n-propyl nitrate	
di-i-propyl amine	7.73	methyl thiocyanate	10.065
di-n-butyl amine	7.69	ethyl thiocyanate	9.89
trimethyl amine	7.82	methyl isothiocyanate	9.25
triethyl amine	7.50	ethyl isothiocyanate	9.14
tri-n-propyl amine	7.23		
formamide	10.25		
acetamide	9.77		
N-methyl acetamide	8.90		
N,N-dimethyl formamide	9.12		
N,N-dimethyl acetamide	8.81		
N,N-diethyl formamide	8.89		
N,N-diethyl acetamide	8.60		



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Olefins, Cyclo-ofefins, Acetylenes

Some Derivatives of Olefins

<u>Molecule</u>	<u>IP(eV)</u>	<u>Molecule</u>	<u>IP(eV)</u>
ethylene	10.515	vinyl chloride	9.995
propylene	9.73	cis-dichloroethylene	9.65
1-butene	9.58	trans-dichloroethylene	e 9.66
2-methylpropene	9.23	trichloroethylene	9.45
trans-2-butene	9.13	tetrachloroethylene	9.32
cis-2-butene	9.13	vinyl bromide	9.80
1-pentene	9.50	1,2-dibromoethylene	9.45
2-methyl-1-butene	9.12	tribromoethylene	9.27
3-methyl-1-butene	9.51	3-chloropropene	10.04
3-methyl-2-butene	8.67	2,3-dichloropropene	9.82
1-hexene	9.46	1-bromopropene	9.30
1,3-butadiene	9.07	3-bromopropene	9.7
isoprene	8.845	CF ₃ CCl=CClCF ₃	10.36
cyclopentene	9.01	$n-C_5F_{11}CF=CF_2$	10.48
cyclohexene	8.945	acrolein	10.10
4-methylcyclohexene	8.91	crotonaldehyde	9.73
4-cinylcylohexene	8.93	mesityl oxide	9.08
cyclo-octatetraene	7.99	vinyl methyl ether	8.93
acetylene	11.41	allyl alcohol	9.67
propyne	10.36	vinyl acetate	9.19
1-butyne	10.18		



Aromatic Compounds

Aromatic Compounds

<u>Molecule</u>	<u>IP(eV)</u>	<u>Molecule</u>	<u>IP(eV)</u>
benzene	9.245	phenyl isothiocyanate	8.520
toluene	8.82	benzonitrile	9.705
ethyl benzene	8.76	nitrobenzene	9.92
n-propyl benzene	8.72	aniline	7.70
i-propyl benzene	8.69	fluoro-benzene	9.195
n-butyl benzene	8.69	chloro-benzene	9.07
s-butyl benzene	8.68	bromo-benzene	8.98
t-butyl benzene	8.68	iodo-benzene	8.73
o-xylene	8.56	o-dichlorobenzene	9.07
m-xylene	8.56	m-dichlorobenzene	9.12
p-xylene	8.445	p-dichlorobenzene	8.94
mesitylene	8.40	1-chloro-2-fluorobenzene	9.155
durene	8.025	1-chloro-3-fluorobenzene	9.21
styrene	8.47	1-chloro-4-fluorobenzene	8.99
alpha-methyl styrene	8.35	o-fluorotoluene	8.915
ethynylbenzene	8.815	m-fluorotoluene	8.915
naphthalene	8.12	p-fluorotoluene	8.785
1-methylnapthalene	7.69	o-chlorotoluene	8.83
2-methylnapthalene	7.955	m-chlorotoluene	8.83
biphenyl	8.27	p-chlorotoluene	8.70
phenol	8.50	o-bromotoluene	8.79
anisole	8.22	m-bromotoluene	8.81
phenetole	8.13	p-bromotoluene	8.67
benzaldehyde	9.53	o-iodotoluene	8.62
acetophenone	9.27	m-iodotoluene	8.61
benzenethiol	8.33	p-iodotoluene	8.50
phenyl isocyanate	8.77	benzotrifluoride	9.68
		o-fluorophenol	8.66



Heterocyclic Molecules

Miscellaneous Molecules

<u>Molecule</u>	<u>IP(eV)</u>	<u>Molecule</u>	IP(eV)
furan	8.89	ethylene oxide	10.565
2-methyl furan	8.39	propylene oxide	10.22
2-furaldehyde	9.21	p-dioxane	9.13
tetrahydrofuran	9.54	dimethoxymethane	10.00
dihydropyran	8.34	diethoxymethane	9.70
tetrahydropyran	9.26	1,1-dimethoxyethane	9.65
thiophene	8.860	propiolactone	9.70
2-chlorothiophene	8.68	methyl disulfide	8.46
2-bromothiophene	8.63	ethyl disulfide	8.27
pyrrole	8.20	diethyl sulfite	9.68
pyridine	9.32	thiolacetic acid	10.00
2-picoline	9.02	acetyl chloride	11.02
3-picoline	9.04	acetyl bromide	10.55
4-picoline	9.04	cyclo-C ₆ H ₁₁ CF ₃	10.46
2,3-lutidine	8.85	$(n-C_3F_7)(CH_3)C=O$	10.58
2,4-lutidine	8.85	trichlorovinylsilane	10.79
2,6-lutidine	8.85	$(C_2F_5)_3N$	11.7
		isoprene	9.08
		phosgene	11.77

Notes:

Reference: HNu Systems, Inc., 1985

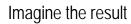
IP = Ionization Potential

ARCADIS

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ATTACHMENT 3

PID CALIBRATION AND MAINTENANCE LOG						
Instrument Model Number						
Instrument Se	rial Number					
Calibration Gas				ppm		
			Calibration			
Date/Time	Initials	Battery Check	Background Value	True Gas Value	Measured Gas Value	Adjust
COMMENTS:						





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Rev Date: February 2, 2011

SOP: Low-Flow Groundwater Purging and Sampling

Procedures for Monitoring Wells

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Approval Signatures

Prepared by: Dail D. Lipur	Date:	2/2/2011	
Reviewed by: Muhal J Sefull (Technical Expert)	Date:	2/2/2011	

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I. Scope and Application

Groundwater samples will be collected from monitoring wells to evaluate groundwater quality. The protocol presented in this standard operating procedure (SOP) describes the procedures to be used to purge monitoring wells and collect groundwater samples. This protocol has been developed in accordance with the United States Environmental Protection Agency (USEPA) Region I Low Stress (Low Flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells (USEPA SOP No. GW0001; July 30, 1996). Both filtered and unfiltered groundwater samples may be collected using this low-flow sampling method. Filtered samples will be obtained using a 0.45-micron disposable filter. No wells will be sampled until well development has been performed in accordance with the procedures presented in the SOP titled Monitoring Well Development, unless that well has been sampled or developed within the prior 1-year time period. Groundwater samples will not be collected within 1 week following well development.

II. Personnel Qualifications

ARCADIS personnel directing, supervising, or leading groundwater sample collection activities should have a minimum of 2 years of previous groundwater sampling experience. ARCADIS personnel providing assistance to groundwater sample collection and associated activities should have a minimum of 6 months of related experience or an advanced degree in environmental sciences, engineering, hydrogeology, or geology.

The supervisor of the groundwater sampling team will have at least 1 year of previous supervised groundwater sampling experience.

Prior to mobilizing to the field, the groundwater sampling team should review and be thoroughly familiar with relevant site-specific documents including but not limited to the site work plan, field sampling plan, QAPP, HASP, and historical information. Additionally, the groundwater sampling team should review and be thoroughly familiar with documentation provided by equipment manufacturers for all equipment that will be used in the field prior to mobilization.

III. Equipment List

Specific to this activity, the following materials (or equivalent) will be available:

 Health and safety equipment (as required in the site Health and Safety Plan [HASP]).

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- Site Plan, well construction records, prior groundwater sampling records (if available).
- Sampling pump, which may consist of one or more of the following:
 - submersible pump (e.g., Grundfos Redi-Flo 2);
 - peristaltic pump (e.g., ISCO Model 150); and/or
 - bladder pump (e.g., Marschalk System 1, QED Well Wizard, Geotech, etc.).
- Appropriate controller and power source for pump:
 - Submersible and peristaltic pumps require electric power from either a generator or a deep cell battery.
 - Submersible pumps such as Grundfos require a pump controller to run the pump
 - Bladder pumps require a pump controller and a gas source (e.g., air compressor or compressed N₂ or CO₂ gas cylinders).
- Teflon[®] tubing or Teflon[®]-lined polyethylene tubing of an appropriate size for the pump being used. For peristaltic pumps, dedicated Tygon[®] tubing (or other type as specified by the manufacturer) will also be used through the pump apparatus.
- Water-level probe (e.g., Solinist Model 101).
- Water-quality (temperature/pH/specific conductivity/ORP/turbidity/dissolved oxygen) meter and flow-through measurement cell. Several brands may be used, including:
 - YSI 6-Series Multi-Parameter Instrument;
 - Hydrolab Series 3 or Series 4a Multiprobe and Display; and/or
 - Horiba U-10 or U-22 Water Quality Monitoring System.
- Supplemental turbidity meter (e.g., Horiba U-10, Hach 2100P, LaMotte 2020).
 Turbidity measurements collected with multi-parameter meters have been shown to sometimes be unreliable due to fouling of the optic lens of the

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turbidity meter within the flow-through cell. A supplemental turbidity meter will be used to verify turbidity data during purging if such fouling is suspected. Note that industry improvements may eliminate the need for these supplemental measurements in the future.

- Appropriate water sample containers (supplied by the laboratory).
- Appropriate blanks (trip blank supplied by the laboratory).
- 0.45-micron disposable filters (if field filtering is required).
- Large glass mixing container (if sampling with a bailer).
- Teflon[®] stirring rod (if sampling with a bailer).
- · Cleaning equipment.
- Groundwater sampling log (attached) or bound field logbook.

Note that in the future, the client may acquire different makes/models of some of this equipment if the listed makes/models are no longer available, or as a result of general upgrades or additional equipment acquisitions. In the event that the client uses a different make/model of the equipment listed, the client will use an equivalent type of equipment (e.g., pumps, flow-through analytical cells) and note the specific make/model of the equipment used during a sampling event on the groundwater sampling log. In addition, should the client desire to change to a markedly different sampling methodology (e.g., discrete interval samplers, passive diffusion bags, or a yet to be developed technique), the client will submit a proposed SOP for the new methodology for USEPA approval prior to implementing such a change.

The maintenance requirements for the above equipment generally involve decontamination or periodic cleaning, battery charging, and proper storage, as specified by the manufacturer. For operational difficulties, the equipment will be serviced by a qualified technician.

IV. Cautions

If heavy precipitation occurs and no cover over the sampling area and monitoring well can be erected, sampling must be discontinued until adequate cover is provided. Rain water could contaminate groundwater samples.

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Do not use permanent marker or felt-tip pens for labels on sample container or sample coolers – use indelible ink. The permanent markers could introduce volatile constituents into the samples.

It may be necessary to field filter some parameters (e.g., metals) prior to collection, depending on preservation, analytical method, and project quality objectives.

Store and/or stage empty and full sample containers and coolers out of direct sunlight.

To mitigate potential cross-contamination, groundwater samples are to be collected in a pre-determined order from least impacted to impacted based on previous analytical data. If no analytical data are available, samples are collected in order of upgradient, then furthest downgradient to source area locations.

Be careful not to over-tighten lids with Teflon liners or septa (e.g., 40 mL vials). Over-tightening can cause the glass to shatter or impair the integrity of the Teflon seal.

V. Health and Safety Considerations

Use caution and appropriate cut resistant gloves when tightening lids to 40 mL vials. These vials can break while tightening and can lacerate hand. Amber vials (thinner glass) are more prone to breakage.

If thunder or lighting is present, discontinue sampling and take cover until 30 minutes have passed after the last occurrence of thunder or lighting.

Use caution when removing well caps as well may be under pressure, cap can dislodge forcefully and cause injury.

Use caution when opening protective casing on stickup wells as wasps frequently nest inside the tops of the covers. Also watch for fire ant mounds near well pads when sampling in the south or western U.S.

VI. Procedure

Groundwater will be purged from the wells using an appropriate pump. Peristaltic pumps will initially be used to purge and sample all wells when applicable. If the depth to water is below the sampling range of a peristaltic pump (approximately 25 feet), submersible pumps or bladder pumps will be used provided the well is constructed with a casing diameter greater than or equal to 2 inches (the minimum well diameter capable of accommodating such pumps). Bladder pumps are preferred over peristaltic and submersible pumps if sampling of VOCs is required to prevent volatilization. For smaller diameter wells where the depth to water is below the sampling range of a

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peristaltic pump, alternative sampling methods (i.e., bailing or small diameter bladder pumps) will be used to purge and sample the groundwater. Purge water will be collected and containerized.

- 1. Calibrate field instruments according to manufacturer procedures for calibration.
- 2. Measure initial depth to groundwater prior to placement of pumps.
- 3. Prepare and install pump in well: For submersible and non-dedicated bladder pumps, decontaminate pump according to site decontamination procedures. Non-dedicated bladder pumps will require a new Teflon® bladder and attachment of an air line, sample discharge line, and safety cable prior to placement in the well. Attach the air line tubing to the air port on the top of the bladder pump. Attach the sample discharge tubing to the water port on the top of the bladder pump. Care should be taken not to reverse the air and discharge tubing lines during bladder pump set-up as this could result in bladder failure or rupture. Attach and secure a safety cable to the eyebolt on the top of bladder pump (if present, depending on pump model used). Slowly lower pump, safety cable, tubing, and electrical lines into the well to a depth corresponding to the approximate center of the saturated screen section of the well. Take care to avoid twisting and tangling of safety cable, tubing, and electrical lines while lowering pump into well; twisted and tangled lines could result in the pump becoming stuck in the well casing. Also, make sure to keep tubing and lines from touching the ground or other surfaces while introducing them into the well as this could lead to well contamination. If a peristaltic pump is being used, slowly lower the sampling tubing into the well to a depth corresponding to the approximate center of the saturated screen section of the well. The pump intake or sampling tube must be kept at least 2 feet above the bottom of the well to prevent mobilization of any sediment present in the bottom of the well.
- 4. If using a bladder pump, connect the air line to the pump controller output port. The pump controller should then be connected to a supply line from an air compressor or compressed gas cylinder using an appropriate regulator and air hose. Take care to tighten the regulator connector onto the gas cylinder (if used) to prevent leaks. Teflon tape may be used on the threads of the cylinder to provide a tighter seal. Once the air compressor or gas cylinder is connected to the pump controller, turn on the compressor or open the valve on the cylinder to begin the gas flow. Turn on the pump controller if an on/off switch is present and verify that all batteries are charged and fully operating before beginning to pump.
- 5. Connect the pump discharge water line to the bottom inlet port on the flow-through cell connected to the water quality meter.

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6. Measure the water level again with the pump in the well before starting the pump. Start pumping the well at 200 to 500 milliliters (mL) per minute (or at lower site-specific rate if specified). The pump rate should be adjusted to cause little or no water level drawdown in the well (less than 0.3 feet below the initial static depth to water measurement) and the water level should stabilize. The water level should be monitored every 3 to 5 minutes (or as appropriate, lower flow rates may require longer time between readings) during pumping if the well diameter is of sufficient size to allow such monitoring. Care should be taken not to break pump suction or cause entrainment of air in the sample. Record pumping rate adjustments and depths to water. If necessary, pumping rates should be reduced to the minimum capabilities of the pump to avoid pumping the well dry and/or to stabilize indicator parameters. A steady flow rate should be maintained to the extent practicable. Groundwater sampling records from previous sampling events (if available) should be reviewed prior to mobilization to estimate the optimum pumping rate and anticipated drawdown for the well in order to more efficiently reach a stabilized pumping condition.

If the recharge rate of the well is very low, alternative purging techniques should be used, which will vary based on the well construction and screen position. For wells screened across the water table, the well should be pumped dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should be pumped until a stabilized level (which may be below the maximum displacement goal of 0.3 feet) can be maintained and monitoring for stabilization of field indicator parameters can commence. If a lower stabilization level cannot be maintained, the well should be pumped until the drawdown is at a level slightly higher than the bentonite seal above the well screen. Sampling should commence after one well volume has been removed and the well has recovered sufficiently to permit collection of samples.

During purging, monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, pH, etc.) every 3 to 5 minutes (or as appropriate). Field indicator parameters will be measured using a flow-through analytical cell or a clean container such as a glass beaker. Record field indicator parameters on the groundwater sampling log. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain within 3%, ORP readings remain within ± 10 mV and pH remains within 0.1 units for three consecutive readings collected at 3- to 5-minute intervals (or other appropriate interval, alternate stabilization goals may exist in different geographic regions, consult the site-specific Work Plan for stabilization criteria). If the field indicator parameters do not stabilize within 1 hour of the start of purging, but the groundwater turbidity is

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below the goal of 50 NTU and the values for all other parameters are within 10%, the well can be sampled. If the parameters have stabilized but the turbidity is not in the range of the 50 NTU goal, the pump flow rate should be decreased to a minimum rate of 100 mL/min to reduce turbidity levels as low as possible. Dissolved oxygen is extremely susceptible to various external influences (including temperature or the presence of bubbles on the DO meter); care should be taken to minimize the agitation or other disturbance of water within the flow-through cell while collecting these measurements. If air bubbles are present on the DO probe or in the discharge tubing, remove them before taking a measurement. If dissolved oxygen values are not within acceptable range for the temperature of groundwater (Attachment 1), then again check for and remove air bubbles on probe before re-measuring. If the dissolved oxygen value is 0.00 or less, then the meter should be serviced and re-calibrated. If the dissolved oxygen values are above possible results, then the meter should be serviced and re-calibrated.

During extreme weather conditions, stabilization of field indicator parameters may be difficult to obtain. Modifications to the sampling procedures to alleviate these conditions (e.g., measuring the water temperature in the well adjacent to the pump intake) will be documented in the field notes. If other field conditions exist that preclude stabilization of certain parameters, an explanation of why the parameters did not stabilize will also be documented in the field logbook.

- 7. Complete the sample label(s) and cover the label(s) with clear packing tape to secure the label onto the container.
- 8. After the indicator parameters have stabilized, collect groundwater samples by diverting flow out of the unfiltered discharge tubing into the appropriate labeled sample container. If a flow-through analytical cell is being used to measure field parameters, the flow-through cell should be disconnected after stabilization of the field indicator parameters and prior to groundwater sample collection. Under no circumstances should analytical samples be collected from the discharge of the flow-through cell. When the container is full, tightly screw on the cap. Samples should be collected in the following order: VOCs, TOC, SVOCs, metals and cyanide, and others (or other order as defined in the site-specific Work Plan).
- 9. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Install an in-line, disposable 0.45-micron particle filter on the discharge tubing after the appropriate unfiltered groundwater sample has been collected. Continue to run the pump until an initial volume of "flush" water has been run through the filter in accordance with the manufacturer's directions (generally 100 to 300 mL). Collect filtered groundwater sample by diverting flow

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out of the filter into the appropriately labeled sample container. When the container is full, tightly screw on the cap.

- 10. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.
- 11. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the stabilized field indicator parameters as measured during the final reading during purging (Attachment 2 Example Sampling Log).
- 12. Turn off the pump and air compressor or close the gas cylinder valve if using a bladder pump set-up. Slowly remove the pump, tubing, lines, and safety cable from the well. Do not allow the tubing or lines to touch the ground or any other surfaces which could contaminate them.
- 13. If tubing is to be dedicated to a well, it should be folded to a length that will allow the well to be capped and also facilitate retrieval of the tubing during later sampling events. A length of rope or string should be used to tie the tubing to the well cap. Alternatively, if tubing and safety line are to be saved and reused for sampling the well at a later date they may be coiled neatly and placed in a clean plastic bag that is clearly labeled with the well ID. Make sure the bag is tightly sealed before placing it in storage.
- 14. Secure the well and properly dispose of personal protective equipment (PPE) and disposable equipment.
- 15. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.
- Complete decontamination procedures for flow-through analytical cell and submersible or bladder pump, as appropriate.
- 17. At the end of the day, perform calibration check of field instruments.

If it is not technically feasible to use the low-flow sampling method, purging and sampling of monitoring wells may be conducted using the bailer method as outlined below:

- 1. Don appropriate PPE (as required by the HASP).
- Place plastic sheeting around the well.

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- 3. Clean sampling equipment.
- 4. Open the well cover while standing upwind of the well. Remove well cap and place on the plastic sheeting. Insert PID probe approximately 4 to 6 inches into the casing or the well headspace and cover with gloved hand. Record the PID reading in the field log. If the well headspace reading is less than 5 PID units, proceed; if the headspace reading is greater than 5 PID units, screen the air within the breathing zone. If the breathing zone reading is less than 5 PID units, proceed. If the PID reading in the breathing zone is above 5 PID units, move upwind from well for 5 minutes to allow the volatiles to dissipate. Repeat the breathing zone test. If the reading is still above 5 PID units, don appropriate respiratory protection in accordance with the requirements of the HASP. Record all PID readings. For wells that are part of the regular weekly monitoring program and prior PID measurements have not resulted in a breathing zone reading above 5 PID units, PID measurements will be taken monthly.
- 5. Measure the depth to water and determine depth of well by examining drilling log data or by direct measurement. Calculate the volume of water in the well (in gallons) by using the length of the water column (in feet), multiplying by 0.163 for a 2-inch well or by 0.653 for a 4-inch well. For other well diameters, use the formula:
 - Volume (in gallons) = π TIMES well radius (in feet) squared TIMES length of water column (in feet) TIMES 7.481 (gallons per cubic foot)
- 6. Measure a length of rope or twine at least 10 feet greater than the total depth of the well. Secure one end of the rope to the well casing and secure the other end to the bailer. Test the knots and make sure the rope will not loosen. Check bailers so that all parts are intact and will not be lost in the well.
- 7. Lower bailer into well and remove one well volume of water. Contain all water in appropriate containers.
- 8. Monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, and pH). Measure field indicator parameters using a clean container such as a glass beaker or sampling cups provided with the instrument. Record field indicator parameters on the groundwater sampling log.
- 9. Repeat Steps 7 and 8 until three or four well volumes have been removed. Examine the field indicator parameter data to determine if the parameters have stabilized. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain

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within 3%, and pH remains within \Box 0.1 units for three consecutive readings collected once per well volume removed.

- 10. If the field indicator parameters have not stabilized, remove a maximum of five well volumes prior to sample collection. Alternatively, five well volumes may be removed without measuring the field indicator parameters.
- 11. If the recharge rate of the well is very low, wells screened across the water table may be bailed dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should only be bailed down to a level slightly higher than the bentonite seal above the well screen. The well should not be bailed completely dry, to maintain the integrity of the seal. Sampling should commence as soon as the well volume has recovered sufficiently to permit sample collection.
- 12. Following purging, allow water level in well to recharge to a sufficient level to permit sample collection.
- 13. Complete the sample label and cover the label with clear packing tape to secure the label onto the container.
- 14. Slowly lower the bailer into the screened portion of the well and carefully retrieve a filled bailer from the well causing minimal disturbance to the water and any sediment in the well.
- 15. The sample collection order (as appropriate) will be as follows:
 - a. VOCs;
 - b TOC;
 - c. SVOCs;
 - d. metals and cyanide; and
 - e. others.
- 16. When sampling for volatiles, collect water samples directly from the bailer into 40-mL vials with Teflon[®]-lined septa.
- 17. For other analytical samples, remove the cap from the large glass mixing container and slowly empty the bailer into the large glass mixing container. The

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sample for dissolved metals and/or filtered PCBs should either be placed directly from the bailer into a pressure filter apparatus or pumped directly from the bailer with a peristaltic pump, through an in-line filter, into the pre-preserved sample bottle.

- 18. Continue collecting samples until the mixing container contains a sufficient volume for all laboratory samples.
- 19. Mix the entire sample volume with the Teflon® stirring rod and transfer the appropriate volume into the laboratory jar(s). Secure the sample jar cap(s) tightly.
- 20. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Sample filtration for the filtered sample will be performed in the field using a peristaltic pump prior to preservation. Install new medical-grade silicone tubing in the pump head. Place new Teflon[®] tubing into the sample mixing container and attach to the intake side of pump tubing. Attach (clamp) a new 0.45-micron filter (note the filter flow direction). Turn the pump on and dispense the filtered liquid directly into the laboratory sample bottles.
- 21. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.
- 22. After sample containers have been filled, remove one additional volume of groundwater. Measure the pH, temperature, turbidity, and conductivity. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the field indicator parameters.
- 23. Remove bailer from well, secure well, and properly dispose of PPE and disposable equipment.
- 24. If a bailer is to be dedicated to a well, it should be secured inside the well above the water table, if possible. Dedicated bailers should be tied to the well cap so that inadvertent loss of the bailer will not occur when the well is opened.
- 25. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.

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VII. Waste Management

Materials generated during groundwater sampling activities, including disposable equipment, will be placed in appropriate containers. Containerized waste will be disposed of by the client consistent with the procedures identified in the HASP.

VIII. Data Recording and Management

Initial field logs and chain-of-custody records will be transmitted to the ARCADIS PM at the end of each day unless otherwise directed by the PM. The groundwater team leader retains copies of the groundwater sampling logs.

IX. Quality Assurance

In addition to the quality control samples to be collected in accordance with this SOP, the following quality control procedures should be observed in the field:

- Collect samples from monitoring wells in order of increasing concentration, to the extent known based on review of historical site information if available.
- Equipment blanks should include the pump and tubing (if using disposable tubing) or the pump only (if using tubing dedicated to each well).
- Collect equipment blanks after wells with higher concentrations (if known) have been sampled.
- Operate all monitoring instrumentation in accordance with manufacturer's instructions and calibration procedures. Calibrate instruments at the beginning of each day and verify the calibration at the end of each day. Record all calibration activities in the field notebook.
- Clean all groundwater sampling equipment prior to use in the first well and after each subsequent well using procedures for equipment decontamination.

X. References

United States Environmental Protection Agency (USEPA). 1986. RCRA Groundwater Monitoring Technical Enforcement Guidance Document (September 1986).

USEPA Region II. 1998. *Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling.*

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USEPA. 1991. Handbook Groundwater, Volume II Methodology, Office of Research and Development, Washington, DC. USEPN62S, /6-90/016b (July, 1991).

U.S. Geological Survey (USGS). 1977. National Handbook of Recommended Methods for Water-Data Acquisition: USGS Office of Water Data Coordination. Reston, Virginia.

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Attachment 1

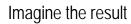
Groundwater Sampling Log

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Attachment 2 Oxygen Solubility in Fresh Water

Temperature (degrees C)	Dissolved Oxygen (mg/L)
0	14.6
1	14.19
2	13.81
3	13.44
4	13.09
5	12.75
6	12.43
7	12.12
8	11.83
9	11.55
10	11.27
11	11.01
12	10.76
13	10.52
14	10.29
15	10.07
16	9.85
17	9.65
18	9.45
19	9.26
20	9.07
21	8.9
22	8.72
23	8.56
24	8.4
25	8.24
26	8.09
27	7.95
28	7.81
29	7.67
30	7.54
31	7.41
32	7.28
33	7.16
34	7.05
35	6.93

Reference: Vesilind, P.A., *Introduction to Environmental Engineering*, PWS Publishing Company, Boston, 468 pages (1996).





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Procedures for Monitoring Wells

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Approval Signatures

Prepared by: Dail D. Lipur	Date:	2/2/2011	
Reviewed by: Muhal J Sefull (Technical Expert)	Date:	2/2/2011	

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I. Scope and Application

Groundwater samples will be collected from monitoring wells to evaluate groundwater quality. The protocol presented in this standard operating procedure (SOP) describes the procedures to be used to purge monitoring wells and collect groundwater samples. This protocol has been developed in accordance with the United States Environmental Protection Agency (USEPA) Region I Low Stress (Low Flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells (USEPA SOP No. GW0001; July 30, 1996). Both filtered and unfiltered groundwater samples may be collected using this low-flow sampling method. Filtered samples will be obtained using a 0.45-micron disposable filter. No wells will be sampled until well development has been performed in accordance with the procedures presented in the SOP titled Monitoring Well Development, unless that well has been sampled or developed within the prior 1-year time period. Groundwater samples will not be collected within 1 week following well development.

II. Personnel Qualifications

ARCADIS personnel directing, supervising, or leading groundwater sample collection activities should have a minimum of 2 years of previous groundwater sampling experience. ARCADIS personnel providing assistance to groundwater sample collection and associated activities should have a minimum of 6 months of related experience or an advanced degree in environmental sciences, engineering, hydrogeology, or geology.

The supervisor of the groundwater sampling team will have at least 1 year of previous supervised groundwater sampling experience.

Prior to mobilizing to the field, the groundwater sampling team should review and be thoroughly familiar with relevant site-specific documents including but not limited to the site work plan, field sampling plan, QAPP, HASP, and historical information. Additionally, the groundwater sampling team should review and be thoroughly familiar with documentation provided by equipment manufacturers for all equipment that will be used in the field prior to mobilization.

III. Equipment List

Specific to this activity, the following materials (or equivalent) will be available:

 Health and safety equipment (as required in the site Health and Safety Plan [HASP]).

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- Site Plan, well construction records, prior groundwater sampling records (if available).
- Sampling pump, which may consist of one or more of the following:
 - submersible pump (e.g., Grundfos Redi-Flo 2);
 - peristaltic pump (e.g., ISCO Model 150); and/or
 - bladder pump (e.g., Marschalk System 1, QED Well Wizard, Geotech, etc.).
- Appropriate controller and power source for pump:
 - Submersible and peristaltic pumps require electric power from either a generator or a deep cell battery.
 - Submersible pumps such as Grundfos require a pump controller to run the pump
 - Bladder pumps require a pump controller and a gas source (e.g., air compressor or compressed N₂ or CO₂ gas cylinders).
- Teflon[®] tubing or Teflon[®]-lined polyethylene tubing of an appropriate size for the pump being used. For peristaltic pumps, dedicated Tygon[®] tubing (or other type as specified by the manufacturer) will also be used through the pump apparatus.
- Water-level probe (e.g., Solinist Model 101).
- Water-quality (temperature/pH/specific conductivity/ORP/turbidity/dissolved oxygen) meter and flow-through measurement cell. Several brands may be used, including:
 - YSI 6-Series Multi-Parameter Instrument;
 - Hydrolab Series 3 or Series 4a Multiprobe and Display; and/or
 - Horiba U-10 or U-22 Water Quality Monitoring System.
- Supplemental turbidity meter (e.g., Horiba U-10, Hach 2100P, LaMotte 2020).
 Turbidity measurements collected with multi-parameter meters have been shown to sometimes be unreliable due to fouling of the optic lens of the

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turbidity meter within the flow-through cell. A supplemental turbidity meter will be used to verify turbidity data during purging if such fouling is suspected. Note that industry improvements may eliminate the need for these supplemental measurements in the future.

- Appropriate water sample containers (supplied by the laboratory).
- Appropriate blanks (trip blank supplied by the laboratory).
- 0.45-micron disposable filters (if field filtering is required).
- Large glass mixing container (if sampling with a bailer).
- Teflon[®] stirring rod (if sampling with a bailer).
- · Cleaning equipment.
- Groundwater sampling log (attached) or bound field logbook.

Note that in the future, the client may acquire different makes/models of some of this equipment if the listed makes/models are no longer available, or as a result of general upgrades or additional equipment acquisitions. In the event that the client uses a different make/model of the equipment listed, the client will use an equivalent type of equipment (e.g., pumps, flow-through analytical cells) and note the specific make/model of the equipment used during a sampling event on the groundwater sampling log. In addition, should the client desire to change to a markedly different sampling methodology (e.g., discrete interval samplers, passive diffusion bags, or a yet to be developed technique), the client will submit a proposed SOP for the new methodology for USEPA approval prior to implementing such a change.

The maintenance requirements for the above equipment generally involve decontamination or periodic cleaning, battery charging, and proper storage, as specified by the manufacturer. For operational difficulties, the equipment will be serviced by a qualified technician.

IV. Cautions

If heavy precipitation occurs and no cover over the sampling area and monitoring well can be erected, sampling must be discontinued until adequate cover is provided. Rain water could contaminate groundwater samples.

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Do not use permanent marker or felt-tip pens for labels on sample container or sample coolers – use indelible ink. The permanent markers could introduce volatile constituents into the samples.

It may be necessary to field filter some parameters (e.g., metals) prior to collection, depending on preservation, analytical method, and project quality objectives.

Store and/or stage empty and full sample containers and coolers out of direct sunlight.

To mitigate potential cross-contamination, groundwater samples are to be collected in a pre-determined order from least impacted to impacted based on previous analytical data. If no analytical data are available, samples are collected in order of upgradient, then furthest downgradient to source area locations.

Be careful not to over-tighten lids with Teflon liners or septa (e.g., 40 mL vials). Over-tightening can cause the glass to shatter or impair the integrity of the Teflon seal.

V. Health and Safety Considerations

Use caution and appropriate cut resistant gloves when tightening lids to 40 mL vials. These vials can break while tightening and can lacerate hand. Amber vials (thinner glass) are more prone to breakage.

If thunder or lighting is present, discontinue sampling and take cover until 30 minutes have passed after the last occurrence of thunder or lighting.

Use caution when removing well caps as well may be under pressure, cap can dislodge forcefully and cause injury.

Use caution when opening protective casing on stickup wells as wasps frequently nest inside the tops of the covers. Also watch for fire ant mounds near well pads when sampling in the south or western U.S.

VI. Procedure

Groundwater will be purged from the wells using an appropriate pump. Peristaltic pumps will initially be used to purge and sample all wells when applicable. If the depth to water is below the sampling range of a peristaltic pump (approximately 25 feet), submersible pumps or bladder pumps will be used provided the well is constructed with a casing diameter greater than or equal to 2 inches (the minimum well diameter capable of accommodating such pumps). Bladder pumps are preferred over peristaltic and submersible pumps if sampling of VOCs is required to prevent volatilization. For smaller diameter wells where the depth to water is below the sampling range of a

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peristaltic pump, alternative sampling methods (i.e., bailing or small diameter bladder pumps) will be used to purge and sample the groundwater. Purge water will be collected and containerized.

- 1. Calibrate field instruments according to manufacturer procedures for calibration.
- 2. Measure initial depth to groundwater prior to placement of pumps.
- 3. Prepare and install pump in well: For submersible and non-dedicated bladder pumps, decontaminate pump according to site decontamination procedures. Non-dedicated bladder pumps will require a new Teflon® bladder and attachment of an air line, sample discharge line, and safety cable prior to placement in the well. Attach the air line tubing to the air port on the top of the bladder pump. Attach the sample discharge tubing to the water port on the top of the bladder pump. Care should be taken not to reverse the air and discharge tubing lines during bladder pump set-up as this could result in bladder failure or rupture. Attach and secure a safety cable to the eyebolt on the top of bladder pump (if present, depending on pump model used). Slowly lower pump, safety cable, tubing, and electrical lines into the well to a depth corresponding to the approximate center of the saturated screen section of the well. Take care to avoid twisting and tangling of safety cable, tubing, and electrical lines while lowering pump into well; twisted and tangled lines could result in the pump becoming stuck in the well casing. Also, make sure to keep tubing and lines from touching the ground or other surfaces while introducing them into the well as this could lead to well contamination. If a peristaltic pump is being used, slowly lower the sampling tubing into the well to a depth corresponding to the approximate center of the saturated screen section of the well. The pump intake or sampling tube must be kept at least 2 feet above the bottom of the well to prevent mobilization of any sediment present in the bottom of the well.
- 4. If using a bladder pump, connect the air line to the pump controller output port. The pump controller should then be connected to a supply line from an air compressor or compressed gas cylinder using an appropriate regulator and air hose. Take care to tighten the regulator connector onto the gas cylinder (if used) to prevent leaks. Teflon tape may be used on the threads of the cylinder to provide a tighter seal. Once the air compressor or gas cylinder is connected to the pump controller, turn on the compressor or open the valve on the cylinder to begin the gas flow. Turn on the pump controller if an on/off switch is present and verify that all batteries are charged and fully operating before beginning to pump.
- 5. Connect the pump discharge water line to the bottom inlet port on the flow-through cell connected to the water quality meter.

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6. Measure the water level again with the pump in the well before starting the pump. Start pumping the well at 200 to 500 milliliters (mL) per minute (or at lower site-specific rate if specified). The pump rate should be adjusted to cause little or no water level drawdown in the well (less than 0.3 feet below the initial static depth to water measurement) and the water level should stabilize. The water level should be monitored every 3 to 5 minutes (or as appropriate, lower flow rates may require longer time between readings) during pumping if the well diameter is of sufficient size to allow such monitoring. Care should be taken not to break pump suction or cause entrainment of air in the sample. Record pumping rate adjustments and depths to water. If necessary, pumping rates should be reduced to the minimum capabilities of the pump to avoid pumping the well dry and/or to stabilize indicator parameters. A steady flow rate should be maintained to the extent practicable. Groundwater sampling records from previous sampling events (if available) should be reviewed prior to mobilization to estimate the optimum pumping rate and anticipated drawdown for the well in order to more efficiently reach a stabilized pumping condition.

If the recharge rate of the well is very low, alternative purging techniques should be used, which will vary based on the well construction and screen position. For wells screened across the water table, the well should be pumped dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should be pumped until a stabilized level (which may be below the maximum displacement goal of 0.3 feet) can be maintained and monitoring for stabilization of field indicator parameters can commence. If a lower stabilization level cannot be maintained, the well should be pumped until the drawdown is at a level slightly higher than the bentonite seal above the well screen. Sampling should commence after one well volume has been removed and the well has recovered sufficiently to permit collection of samples.

During purging, monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, pH, etc.) every 3 to 5 minutes (or as appropriate). Field indicator parameters will be measured using a flow-through analytical cell or a clean container such as a glass beaker. Record field indicator parameters on the groundwater sampling log. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain within 3%, ORP readings remain within ± 10 mV and pH remains within 0.1 units for three consecutive readings collected at 3- to 5-minute intervals (or other appropriate interval, alternate stabilization goals may exist in different geographic regions, consult the site-specific Work Plan for stabilization criteria). If the field indicator parameters do not stabilize within 1 hour of the start of purging, but the groundwater turbidity is

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below the goal of 50 NTU and the values for all other parameters are within 10%, the well can be sampled. If the parameters have stabilized but the turbidity is not in the range of the 50 NTU goal, the pump flow rate should be decreased to a minimum rate of 100 mL/min to reduce turbidity levels as low as possible. Dissolved oxygen is extremely susceptible to various external influences (including temperature or the presence of bubbles on the DO meter); care should be taken to minimize the agitation or other disturbance of water within the flow-through cell while collecting these measurements. If air bubbles are present on the DO probe or in the discharge tubing, remove them before taking a measurement. If dissolved oxygen values are not within acceptable range for the temperature of groundwater (Attachment 1), then again check for and remove air bubbles on probe before re-measuring. If the dissolved oxygen value is 0.00 or less, then the meter should be serviced and re-calibrated. If the dissolved oxygen values are above possible results, then the meter should be serviced and re-calibrated.

During extreme weather conditions, stabilization of field indicator parameters may be difficult to obtain. Modifications to the sampling procedures to alleviate these conditions (e.g., measuring the water temperature in the well adjacent to the pump intake) will be documented in the field notes. If other field conditions exist that preclude stabilization of certain parameters, an explanation of why the parameters did not stabilize will also be documented in the field logbook.

- 7. Complete the sample label(s) and cover the label(s) with clear packing tape to secure the label onto the container.
- 8. After the indicator parameters have stabilized, collect groundwater samples by diverting flow out of the unfiltered discharge tubing into the appropriate labeled sample container. If a flow-through analytical cell is being used to measure field parameters, the flow-through cell should be disconnected after stabilization of the field indicator parameters and prior to groundwater sample collection. Under no circumstances should analytical samples be collected from the discharge of the flow-through cell. When the container is full, tightly screw on the cap. Samples should be collected in the following order: VOCs, TOC, SVOCs, metals and cyanide, and others (or other order as defined in the site-specific Work Plan).
- 9. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Install an in-line, disposable 0.45-micron particle filter on the discharge tubing after the appropriate unfiltered groundwater sample has been collected. Continue to run the pump until an initial volume of "flush" water has been run through the filter in accordance with the manufacturer's directions (generally 100 to 300 mL). Collect filtered groundwater sample by diverting flow

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out of the filter into the appropriately labeled sample container. When the container is full, tightly screw on the cap.

- 10. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.
- 11. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the stabilized field indicator parameters as measured during the final reading during purging (Attachment 2 Example Sampling Log).
- 12. Turn off the pump and air compressor or close the gas cylinder valve if using a bladder pump set-up. Slowly remove the pump, tubing, lines, and safety cable from the well. Do not allow the tubing or lines to touch the ground or any other surfaces which could contaminate them.
- 13. If tubing is to be dedicated to a well, it should be folded to a length that will allow the well to be capped and also facilitate retrieval of the tubing during later sampling events. A length of rope or string should be used to tie the tubing to the well cap. Alternatively, if tubing and safety line are to be saved and reused for sampling the well at a later date they may be coiled neatly and placed in a clean plastic bag that is clearly labeled with the well ID. Make sure the bag is tightly sealed before placing it in storage.
- 14. Secure the well and properly dispose of personal protective equipment (PPE) and disposable equipment.
- 15. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.
- Complete decontamination procedures for flow-through analytical cell and submersible or bladder pump, as appropriate.
- 17. At the end of the day, perform calibration check of field instruments.

If it is not technically feasible to use the low-flow sampling method, purging and sampling of monitoring wells may be conducted using the bailer method as outlined below:

- 1. Don appropriate PPE (as required by the HASP).
- Place plastic sheeting around the well.

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- 3. Clean sampling equipment.
- 4. Open the well cover while standing upwind of the well. Remove well cap and place on the plastic sheeting. Insert PID probe approximately 4 to 6 inches into the casing or the well headspace and cover with gloved hand. Record the PID reading in the field log. If the well headspace reading is less than 5 PID units, proceed; if the headspace reading is greater than 5 PID units, screen the air within the breathing zone. If the breathing zone reading is less than 5 PID units, proceed. If the PID reading in the breathing zone is above 5 PID units, move upwind from well for 5 minutes to allow the volatiles to dissipate. Repeat the breathing zone test. If the reading is still above 5 PID units, don appropriate respiratory protection in accordance with the requirements of the HASP. Record all PID readings. For wells that are part of the regular weekly monitoring program and prior PID measurements have not resulted in a breathing zone reading above 5 PID units, PID measurements will be taken monthly.
- 5. Measure the depth to water and determine depth of well by examining drilling log data or by direct measurement. Calculate the volume of water in the well (in gallons) by using the length of the water column (in feet), multiplying by 0.163 for a 2-inch well or by 0.653 for a 4-inch well. For other well diameters, use the formula:
 - Volume (in gallons) = π TIMES well radius (in feet) squared TIMES length of water column (in feet) TIMES 7.481 (gallons per cubic foot)
- 6. Measure a length of rope or twine at least 10 feet greater than the total depth of the well. Secure one end of the rope to the well casing and secure the other end to the bailer. Test the knots and make sure the rope will not loosen. Check bailers so that all parts are intact and will not be lost in the well.
- 7. Lower bailer into well and remove one well volume of water. Contain all water in appropriate containers.
- 8. Monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, and pH). Measure field indicator parameters using a clean container such as a glass beaker or sampling cups provided with the instrument. Record field indicator parameters on the groundwater sampling log.
- 9. Repeat Steps 7 and 8 until three or four well volumes have been removed. Examine the field indicator parameter data to determine if the parameters have stabilized. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain

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within 3%, and pH remains within \Box 0.1 units for three consecutive readings collected once per well volume removed.

- 10. If the field indicator parameters have not stabilized, remove a maximum of five well volumes prior to sample collection. Alternatively, five well volumes may be removed without measuring the field indicator parameters.
- 11. If the recharge rate of the well is very low, wells screened across the water table may be bailed dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should only be bailed down to a level slightly higher than the bentonite seal above the well screen. The well should not be bailed completely dry, to maintain the integrity of the seal. Sampling should commence as soon as the well volume has recovered sufficiently to permit sample collection.
- 12. Following purging, allow water level in well to recharge to a sufficient level to permit sample collection.
- 13. Complete the sample label and cover the label with clear packing tape to secure the label onto the container.
- 14. Slowly lower the bailer into the screened portion of the well and carefully retrieve a filled bailer from the well causing minimal disturbance to the water and any sediment in the well.
- 15. The sample collection order (as appropriate) will be as follows:
 - a. VOCs;
 - b TOC;
 - c. SVOCs;
 - d. metals and cyanide; and
 - e. others.
- 16. When sampling for volatiles, collect water samples directly from the bailer into 40-mL vials with Teflon[®]-lined septa.
- 17. For other analytical samples, remove the cap from the large glass mixing container and slowly empty the bailer into the large glass mixing container. The

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sample for dissolved metals and/or filtered PCBs should either be placed directly from the bailer into a pressure filter apparatus or pumped directly from the bailer with a peristaltic pump, through an in-line filter, into the pre-preserved sample bottle.

- 18. Continue collecting samples until the mixing container contains a sufficient volume for all laboratory samples.
- 19. Mix the entire sample volume with the Teflon® stirring rod and transfer the appropriate volume into the laboratory jar(s). Secure the sample jar cap(s) tightly.
- 20. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Sample filtration for the filtered sample will be performed in the field using a peristaltic pump prior to preservation. Install new medical-grade silicone tubing in the pump head. Place new Teflon[®] tubing into the sample mixing container and attach to the intake side of pump tubing. Attach (clamp) a new 0.45-micron filter (note the filter flow direction). Turn the pump on and dispense the filtered liquid directly into the laboratory sample bottles.
- 21. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.
- 22. After sample containers have been filled, remove one additional volume of groundwater. Measure the pH, temperature, turbidity, and conductivity. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the field indicator parameters.
- 23. Remove bailer from well, secure well, and properly dispose of PPE and disposable equipment.
- 24. If a bailer is to be dedicated to a well, it should be secured inside the well above the water table, if possible. Dedicated bailers should be tied to the well cap so that inadvertent loss of the bailer will not occur when the well is opened.
- 25. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.

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VII. Waste Management

Materials generated during groundwater sampling activities, including disposable equipment, will be placed in appropriate containers. Containerized waste will be disposed of by the client consistent with the procedures identified in the HASP.

VIII. Data Recording and Management

Initial field logs and chain-of-custody records will be transmitted to the ARCADIS PM at the end of each day unless otherwise directed by the PM. The groundwater team leader retains copies of the groundwater sampling logs.

IX. Quality Assurance

In addition to the quality control samples to be collected in accordance with this SOP, the following quality control procedures should be observed in the field:

- Collect samples from monitoring wells in order of increasing concentration, to the extent known based on review of historical site information if available.
- Equipment blanks should include the pump and tubing (if using disposable tubing) or the pump only (if using tubing dedicated to each well).
- Collect equipment blanks after wells with higher concentrations (if known) have been sampled.
- Operate all monitoring instrumentation in accordance with manufacturer's instructions and calibration procedures. Calibrate instruments at the beginning of each day and verify the calibration at the end of each day. Record all calibration activities in the field notebook.
- Clean all groundwater sampling equipment prior to use in the first well and after each subsequent well using procedures for equipment decontamination.

X. References

United States Environmental Protection Agency (USEPA). 1986. RCRA Groundwater Monitoring Technical Enforcement Guidance Document (September 1986).

USEPA Region II. 1998. *Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling.*

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ARCADIS

SOP: Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells

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USEPA. 1991. Handbook Groundwater, Volume II Methodology, Office of Research and Development, Washington, DC. USEPN62S, /6-90/016b (July, 1991).

U.S. Geological Survey (USGS). 1977. National Handbook of Recommended Methods for Water-Data Acquisition: USGS Office of Water Data Coordination. Reston, Virginia.

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Attachment 1

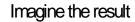
Groundwater Sampling Log

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Attachment 2 Oxygen Solubility in Fresh Water

Temperature (degrees C)	Dissolved Oxygen (mg/L)	
0	14.6	
1	14.19	
2	13.81	
3	13.44	
4	13.09	
5	12.75	
6	12.73	
7	12.43	
8	11.83	
9	11.55	
10	11.27	
11	11.01	
12	10.76	
13	10.52	
14	10.29	
15	10.07	
16	9.85	
17	9.65	
18	9.45	
19	9.26	
20	9.07	
21	8.9	
22	8.72	
23	8.56	
24	8.4	
25	8.24	
26	8.09	
27	7.95	
28	7.81	
29	7.67	
30	7.54	
31	7.41	
32	7.28	
33	7.16	
34	7.05	
35	6.93	

Reference: Vesilind, P.A., *Introduction to Environmental Engineering*, PWS Publishing Company, Boston, 468 pages (1996).





Investigation-Derived Waste Handling and Storage

Rev. #: 2

Rev Date: March 6, 2009

SOP: Investigation-Derived Waste Handling and Storage

Rev. #: 2 | Rev Date: March 6, 2009

Approval Signatures

Prepared by Andrew Kami	A Date: _	3/6/09	
Reviewed by: Reviewed by:	Date:	3/6/09	
(Texinical Expert)			

SOP: Investigation-Derived Waste Handling and Storage

Rev. #: 2 | Rev Date: March 6, 2009

I. Scope and Application

The objective of this Standard Operating Procedure (SOP) is to describe the procedures to manage investigation-derived wastes (IDW), both hazardous and nonhazardous, generated during site activities, which may include, but are not limited to drilling, trenching/excavation, construction, demolition, monitoring well sampling, soil sampling, decontamination and remediation. Please note that this SOP is intended for materials that have been deemed a solid waste as defined by 40 CFR § 261.2 (which may includes liquids, solids, and sludges). In some cases, field determinations will be made based on field screening or previous data that materials are not considered a solid waste. IDW may include soil, groundwater, drilling fluids, decontamination liquids, personal protective equipment (PPE), sorbent materials, construction and demolition debris, and disposable sampling materials that may have come in contact with potentially impacted materials. IDW will be collected and staged at the point of generation. Quantities small enough to be containerized in 55-gallon drums will be taken to a designated temporary storage area (discussed in further detail under Drum Storage) onsite pending characterization and disposal. Waste materials will be analyzed for constituents of concern to evaluate proper disposal methods. PPE and disposable sampling equipment will be placed in DOT-approved drums prior to disposal and typically does not require laboratory analysis. This SOP describes the necessary equipment, field procedures, materials, regulatory references, and documentation procedures necessary for proper handling and storage of IDW up to the time it is properly disposed. The procedures for handling IDW are based on the United States Environmental Protection Agency's Guide to Management of Investigation Derived Wastes (USEPA, 1992). IDW is assumed to be contaminated with the site constituents of concern (COCs) until analytical evidence indicates otherwise. IDW will be managed to ensure the protection of human health and the environment and will comply with all applicable or relevant and appropriate requirements (ARAR). The following Laws and Regulations on Hazardous Waste Management are potential ARAR for this site.

State Laws and Regulations

To Be Determined Based on Location of Site and Location of Treatment,
 Storage, and/or Disposal Facility (TSDF) to be utilized

Federal Laws and Regulations

- Resource Conservation and Recovery Act (RCRA) 42 USC § 6901-6987
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 42 USC § 9601-9675

 ${\hbox{SOP: Investigation-Derived Waste Handling and Storage}}\\$

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- Superfund Amendments and Reauthorization Act (SARA)
- Department of Transportation (DOT) Hazardous Materials Transportation

Pending characterization, IDW will be stored appropriately within each area of contamination (AOC). Under RCRA, "storage" is defined as the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere" (40 CFR § 260.10). The onsite waste staging area will be in a secure and controlled area. Waste characterization can either be based on generator knowledge, such as using materials safety data sheets (MSDS'), or can be based upon analytical results. The laboratory used for waste characterization analysis must have the appropriate state and federal certifications and be approved by ARCADIS and Client. IDW will be classified as RCRA hazardous or non-regulated under RCRA based on the waste characterization.

If IDW is characterized as RCRA hazardous waste, RCRA and DOT requirements must be followed for packaging, labeling, transporting, storing, and record keeping as described in 40 CFR § 262 and 49 CFR § 171-178. Wastes judged to potentially meet the criteria for hazardous wastes shall be stored in DOT approved packaging. Waste material classified as RCRA non-hazardous may be handled and disposed of as an industrial waste.

Liquid wastes judged to potentially meet the criteria for hazardous wastes shall be stored in DOT approved 55 gallon drums or other approved containers that are compatible with the type of material stored therein. Solid materials deemed to potentially meet hazardous criteria will be drummed where practicable. Large quantities of potentially hazardous solid materials must be containerized (such as in a roll-off box) for up to a maximum of 90 or 180 days as described in the Excavated Solids Section. Waste material classified as non-hazardous may be handled and disposed of as an industrial waste and is not subject to the 90-day or 180-day on-site storage limitation.

This is a standard (i.e., typically applicable) operating procedure which may be varied or changed as required, dependent upon site conditions, equipment limitations, or limitations imposed by the procedure. The ultimate procedure employed will be documented in the project work plans or reports. If changes to the sampling procedures are required due to unanticipated field conditions, the changes will be discussed with the Project Manager and Client as soon as practicable and documented in the report.

II. Personnel Qualifications

ARCADIS field sampling personnel will have current health and safety training including 40-hour HAZWOPER training, site supervisor training, site-specific training, first aid, and CPR, as needed. ARCADIS personnel may sign manifests on a case-to-case basis for clients, provided the appropriate agreement is in place between ARCADIS and the client documenting that ARCADIS is not the generator, but is acting as authorized representative for the generator. ARCADIS personnel who sign hazardous waste manifests will have the current DOT hazardous materials transportation training according to 49 CFR § 172.704. ARCADIS field personnel will also comply with client-specific training such as LPS. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and posses the required skills and experience necessary to successfully complete the desired field work.

III. Equipment List

The following materials, as required, shall be available for IDW handling and storage:

Appropriate personal protective equipment as specified in the Site Health and Safety Plan

- 55-gallon steel drums, DOT 1A2 or equivalent
- ¾ -inch socket wrench
- Hammer
- Leather gloves
- Drum dolly
- Appropriate drum labels (outdoor waterproof self adhesive)
- Polyethylene storage tank
- Appropriate labeling, packing, chain-of-custody forms, and shipping materials
 as specified in the Chain-of-Custody SOP and Field Sampling Handling,
 Packing, and Shipping SOP.
- Indelible ink and/or permanent marking pens
- Plastic sheeting

- Appropriate sample containers, labels, and forms
- Stainless-steel bucket auger
- Stainless steel spatula or knife
- Stainless steel hand spade
- Stainless steel scoop
- Digital camera
- Field logbook.

IV. Cautions

- Filled drums can be very heavy, always use appropriate moving techniques and equipment.
- Similar media will be stored in the same drums to aid in sample analysis and disposal.
- Drum lids must be secured to prevent rainwater from entering the drums.
- Drums containing solid material may not contain any free liquids.
- Waste containers stored for extended periods of time may be subject to deterioration. Drum over packs may be used as secondary containment.
- All drums must be in good condition to prevent potential leakage and facilitate subsequent disposal. Inspect the drums for dents and rust, and verify the drum has a secure lid prior to use.

V. Health and Safety Considerations

- Appropriate personal protective equipment must be worn by all field personnel within the designated work area.
- Air monitoring may be required during certain field activities as required in the Site Health and Safety Plan.

- If excavating in potentially hazardous areas is possible, contingency plans should be developed to address the potential for encountering gross contamination or non-aqueous phase liquids.
- ARCADIS field personnel will be familiar and compliant with Client-specific health and safety requirements such as Chevron's hand safety policy including the prohibition of fixed and/or folding blade knives.

VI. Procedure

Waste storage and handling procedures to be used depend upon the type of generated waste. For this reason, IDW should be stored in a secure location onsite in separate 55-gallon storage drums, solids can be stockpiled onsite (if non-hazardous), and purge water may be stored in polyethylene tanks. Waste materials such as broken sample bottles or equipment containers and wrappings will be stored in 55-gallon drums unless they were not in contact with sample media.

Management of IDW

Minimization of IDW should be considered by the Project Manager during all phases of the project. Site managers may want to consider techniques such as replacing solvent-based cleaners with aqueous-based cleaners for decontamination of equipment, reuse of equipment (where it can be decontaminated), limitation of traffic between exclusion and support zones, and drilling methods and sampling techniques that generate little waste. Alternative drilling and subsurface sampling methods may include the use of small diameter boreholes, as well as borehole testing methods such as a core penetrometer or direct push technique instead of coring (EPA, 1993).

Drum Storage

Drums containing hazardous waste shall be stored in accordance with the requirements of 40 CFR 265 Subpart I (for containers) and 265 Subpart DD (for containment buildings). All 55-gallon drums will be stored at a secure, centralized on-site location that is readily accessible for vehicular pick-up. Drums confirmed as, or believed to contain hazardous waste will be stored over an impervious surface provided with secondary containment. The storage location will, for drums containing liquid, have a containment system that can contain at least the larger of 10% of the aggregate volume of staged materials or 100% of the volume of the largest container. Drums will be closed during storage and be in good condition in accordance with the Guide to Management of Investigation-Derived Wastes (USEPA, 1992).

SOP: Investigation-Derived Waste Handling and Storage

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Hazardous Waste Determination

Waste material must be characterized to determine if it meets any of the federal definitions of hazardous waste as required by 40 CFR § 262.11. If the waste does not meet any of the federal definitions, it must then be established if any state-specific hazardous waste criteria exist/apply.

Generator Status

Once hazardous waste determination has been made, the generator status will be determined. Large quantity generators (LQG) are generators who generate more than 1,000 kilograms of hazardous waste in a calendar month. Small quantity generators (SQG) of hazardous waste are generators who generate greater than 100 kilograms but less than 1,000 kilograms of hazardous waste in a calendar month. Conditionally exempt small quantity generators (CESQG) are generators who generate less than 100 kilograms of hazardous waste per month. Please note that a generator status may change from month to month and that a notice of this change is usually required by the generator's state agency.

Accumulation Time for Hazardous Waste

A LQG may accumulate hazardous waste on site for 90 days or less without a permit and without having interim status provided that such accumulation is in compliance with specifications in 40 CFR § 262.34. A SQG may accumulate hazardous waste on site for 180 days or less without a permit or without having interim status subject to the requirements of 40 CFR § 262.34(d). CESQG requirements are found in 40 CFR § 261.5. NOTE: The CESQG and SQG provisions of 40 CFR § 261.5, 262.20(e), 262.42(b) and 262.44 may not be recognized by some states (e.g. Rhode Island). State-specific regulations must be reviewed and understood prior to the generation of hazardous waste.

Satellite Accumulation of Hazardous Waste

Satellite accumulation (SAA) shall mean the accumulation of as much as fifty-five (55) gallons of hazardous waste, or the accumulation of as much as one quart of acutely hazardous waste, in containers at or near any point of generation where the waste initially accumulates, which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with the requirements of 40 CFR § 262.34(a) and without any storage time limit, provided that the generator complies with 40 CFR § 262.34(c)(1)(i).

Once more than 55 gallons of hazardous waste accumulates in SAA, the generator has three days to move this waste into storage.

Storage recommendations for hazardous waste include:

- Ignitable Hazardous wastes must be >50 feet from the property line per 40 CFR § 265.176 (LQG generators only).
- Hazardous waste must be stored on a concrete slab (asphalt is acceptable if there are no free liquids in the waste) per 40 CFR § 265.176.
- Drainage must be directed away from the accumulation area.
- Area must be properly vented.
- Area must be secure.

Drum/Container Labeling

ARCADIS

Drums will be labeled on both the side and lid of the drum using a permanent marking pen. Old drum labels must be removed to the extent possible, descriptions crossed out should any information remain, and new labels affixed on top of the old labels. Other containers used to store various types of waste (polyethylene tanks, roll-off boxes, end-dump trailers, etc.) will be labeled with an appropriate "Waste Container" or "Testing in Progress" label pending characterization. Drums and containers will be labeled as follows:

- Appropriate waste characterization label (Testing In Progress, Hazardous, or Non-Hazardous)
- Waste generator's name (e.g., client name)
- Project name
- Name and telephone number of ARCADIS project manager
- Composition of contents (e.g., used oil, acetone 40%, toluene 60%)
- Media (e.g., solid, liquid)
- Accumulation start date

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 Drum number of total drums as reconciled with the Drum Inventory maintained in the field log book.

IDW containers will remain closed except when adding or removing waste. Immediately upon beginning to place waste into the drum/container, a "Waste Container" or "Testing in Progress" label will be filled out to include the information specified above, and affixed to the container. Once the contents of the container are identified as either non-hazardous or hazardous, the following additional labels will be applied. Containers with waste determined to be non-hazardous will be labeled with a green and white "Non-Hazardous Waste" label over the "Waste Container" label. Containers with waste determined to be hazardous will be stored in an onsite storage area and will be labeled with the "Hazardous Waste" label and affixed over the "Waste Container" label. The ACCUMULATION DATE for the hazardous waste is the date the waste is first placed in the container and is the same date as the date on the "Waste Container" label. DOT hazardous class labels must be applied to all hazardous waste containers for shipment offsite to an approved disposal or recycling facility. In addition a DOT proper shipping name shall be included on the hazardous waste label. The transporter should be equipped with the appropriate DOT placards. However, placarding or offering placards to the initial transporter is the responsibility of the generator per 40 CFR § 262.33.

Inspections and Documentation

All IDW will be documented as generated on a Drum Inventory Log maintained in the field log book. The Drum Inventory will record the generation date, type, quantity, matrix and origin (e.g. Boring-1, Test Pit 3, etc) of materials in every drum, as well as a unique identification number for each drum. The drum inventory will be used during drum pickup to assist with labeling of drums. The drum storage area and any other areas of temporarily staged waste, such as soil/debris piles, will be inspected weekly. The weekly inspections will be recorded in the field notebook or on a Weekly Inspection Log. Digital photographs will be taken upon the initial generation and drumming/staging of waste, and final labeling after characterization to document compliance with labeling and storage protocols, and condition of the container. Evidence of damage, tampering or other discrepancy should be documented photographically.

Emergency Response and Notifications

Specific procedures for responding to site emergencies will be detailed in the HASP. If the generator is designated as a LQG, a Contingency Plan will need to be prepared to include emergency response and notification procedures per 40 CFR § 265 Subpart D. In the event of a fire, explosion, or other release which could threaten human health



outside of the site or when Client or ARCADIS has knowledge of a spill that has reached surface water, Client or ARCADIS must immediately notify the National Response Center (800-424-8802) in accordance with 40 CFR § 262.34. Other notifications to state agencies may also be necessary.

Drilling Soil Cuttings and Muds

Soil cuttings are solid to semi-solid soils generated during trenching activities, subsurface soil sampling, or installation of monitoring wells. Depending on the drilling method, drilling fluids known as "muds" may be used to remove soil cuttings. Drilling fluids flushed from the borehole must be directed into a settling section of a mud pit. This allows reuse of the decanted fluids after removal of the settled sediments. Soil cuttings will be labeled and stored in 55-gallon drums with bolt-sealed lids.

Excavated Solids

Excavated solids may include, but are not limited to soil, fill and construction and demolition debris. Excavated solids may be temporarily stockpiled onsite as long as the material is a RCRA non-hazardous waste and the solids will be treated onsite pursuant to a certified, authorized, or permitted treatment method, or properly disposed off-site. Stockpiled materials characterized as hazardous must be immediately containerized and removed from the site within 90 days of generation (except for soils using satellite accumulation). Excavated solids should be stockpiled and maintained in a secure area onsite. At a minimum, the floor of the stockpile area will be covered with a 20-mil high density polyethylene liner that is supported by a foundation or at least a 60-mil high density polyethylene liner that is not supported by a foundation. The excavated material will not contain free liquids. The owner/operator will provide controls for windblown dispersion, run-on control, and precipitation runoff. The run-on control system will prevent flow onto the active portion of the pile during peak discharge from at least a 25-year storm and the run-off management system will collect and control at least the water volume resulting from a 24-hour, 25-year storm (EPA, 1992). Additionally, the stockpile area will be inspected on a weekly basis and after storm events. Individual states may require that the stockpile be inspected/certified by a licensed professional engineer. Stockpiled material will be covered with a 6-mil polyvinyl chloride (PVC) liner. The stockpile cover will be secured in place with appropriate material (concrete blocks, weights, etc.) to prevent the movement of the cover. Excavated solids may also be placed in roll off containers and covered with a 6-mil PVC liner pending results for waste characterization.

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Decontamination Solutions

Decontamination solutions are generated during the decontamination of personal protective equipment and sampling equipment. Decontamination solutions may range from detergents, organic solvents and acids used to decontaminate small field sampling equipment to steam cleaning rinsate used to wash heavy field equipment. These solutions are to be labeled and stored in 55-gallon drums with bolt-sealed lids.

Disposable Equipment

Disposable equipment includes personal protective equipment (tyvek coveralls, gloves, booties and APR cartridges) and disposable sampling equipment such as trowels or disposable bailers. If the media sampled exhibits hazardous characteristics per results of waste characterization sampling, disposable equipment will also be disposed of as a hazardous waste. These materials will be stored onsite in labeled 55-gallon drums pending analytical results for waste characterization.

Purge Water

Purge water includes groundwater generated during well development, groundwater sampling, or aquifer testing. The volume of groundwater generated will dictate the appropriate storage procedure. Monitoring well development and groundwater sampling may generate three well volumes of groundwater or more. This volume will be stored in labeled 55-gallon drums. Aquifer tests may generate significantly greater volumes of groundwater depending on the well yield and the duration of the test. Therefore, large-volume portable polyethylene tanks will be considered for temporary storage pending groundwater-waste characterization.

Purged Water Storage Tank Decontamination and Removal

The following procedures will be used for inspection, cleaning, and offsite removal of storage tanks used for temporary storage of purge water. These procedures are intended to be used for rented portable tanks such as Baker Tanks or Rain for Rent containers. Storage tanks will be made of inert polyethylene materials.

The major steps for preparing a rented tank for return to a vendor include characterizing the purge water, disposing of the purge water, decontaminating the tank, final tank inspection, and mobilization. Decontamination and inspection procedures are describe in further detail below.

 Tank Cleaning: Most vendors require that tanks be free of any sediment and water before returning, a professional cleaning service may be required. Each

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specific vendor should be consulted concerning specific requirements for returning tanks.

 Tank Inspection: After emptying the tank, purged water storage tanks should be inspected for debris, chemical staining, and physical damage. The vendors require that tanks be returned in the original condition (i.e., free of sediment, staining and no physical damage).

VII. Waste Characterization Sampling and Shipping

Soil/Solids Characterization

Waste characterization will be conducted in accordance with waste hauler, waste handling facility, and state/federal requirements. In general, RCRA hazardous wastes are those solid wastes determined by a Toxicity Characteristic Leaching Procedure (TCLP) test or to contain levels of certain toxic metals, pesticides, or other organic chemicals above specific federally regulated thresholds. If the one or more of 40 toxic compounds listed in Table I of 40 CFR § 261.24 are detected in the sample at levels above the maximum unregulated concentrations, the waste must be characterized as a toxic hazardous waste. Wastes can also be considered "listed" hazardous waste depending on site-specific processes.

Composite soil samples will be collected at a frequency of one sample per 10 cubic yard basis for stockpiled soil or one per 55-gallon drum for containerized. A four point composite sample will be collected per 10 cubic yards of stockpiled material and for each drum. Sample and composite frequencies may be adjusted in accordance with the waste handling facility's requirements. Waste characterization samples may be analyzed for the TCLP volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), TCLP RCRA metals, and polychlorinated biphenyls, as well as corrosivity (pH), reactivity and flammability (flashpoint). Additional samples may be collected and analyzed by the laboratory on a contingency basis.

Wastewater Characterization

Waste characterization will be conducted in accordance with the requirements of the waste hauler, waste handling facility, and state/federal governments. In general, purge water should be analyzed by methods appropriate for the known contaminants, if any, that have been historically detected in the monitoring wells. Samples will be collected and analyzed in accordance with the requirements of the waste disposal facility.

Wastewater characterization samples may be analyzed for TCLP volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), TCLP RCRA

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metals, and polychlorinated biphenyls, as well as corrosivity (pH), reactivity and flammability (flashpoint). Additional samples may be collected and analyzed by the laboratory on a contingency basis.

Sample Handling and Shipping

All samples will be appropriately labeled, packed, and shipped, and the chain-of-custody will be filled out in accordance with the Chain-of-Custody SOP and Field Sampling Handling, Packing, and Shipping SOP and Hazardous Materials Packaging and Shipping SOP.

It should be noted that additional training is required for packaging and shipping of hazardous and/or dangerous materials. Please reference the following ARCADIS intranet team page for more information: http://team/sites/hazmat/default.aspx.

Preparing Waste Shipment Documentation (Hazardous and Non-Hazardous)

Waste profiles will be prepared by the ARCADIS PM and forwarded, along with laboratory analytical data to the Client PM for approval/signature. The Client PM will then return the profile to ARCADIS who will then forward to the waste removal contractor for preparation of a manifest. The manifest will be reviewed by ARCADIS prior to forwarding to the Client PM for approval. Upon approval of the manifest, the Client PM will return the original signed manifest directly to the waste contractor or to the ARCADIS PM for forwarding to the waste contractor.

Final drum labeling and pickup will be supervised by an ARCADIS representative who is experienced with waste labeling procedures. The ARCADIS representative will have a copy of the drum inventory maintained in the field book and will reconcile the drum inventory with the profile numbers on the labels and on the manifest. Different profile numbers will be generated for different matrices or materials in the drums. For example, the profile number for drill cuttings will be different than the profile number for purge water. When there are multiple profiles it is critical that the proper label, with the profile number appropriate to a specific material be affixed to the proper drums. A copy of the ARCADIS drum inventory will be provided to the waste transporter during drum pickup and to the facility receiving the waste.

VIII. Data Recording and Management

Waste characterization sample handling, packing, and shipping procedures will be documented in accordance with the *Quality Assurance Project Plan*, if one exists. Copies of the chains-of-custody forms will be maintained in the project file.



Following waste characterization, IDW containers will be re-labeled with the appropriate waste hazardous or non-hazardous waste labels and the client will initiate disposal at the appropriate waste disposal facility.

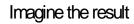
IX. Quality Assurance

The chain-of-custody and sample labels for waste characterization samples will be filled out in accordance with the *Quality Assurance Project Plan*.

X. References

United States Environmental Protection Agency (USEPA). 1992. Guide to Management of Investigation-Derived Wastes. Office of Remedial and Emergency Response. Hazardous Site Control Division. January 1992.

USEPA. 1991. *Guide to Discharging CERCLA Aqueous Wastes to Publicly Owned Treatment Works (POTWs)*. Office of Remedial and Emergency Response. Hazardous Site Control Division 0S-220W. March 1991.





Field Log Book Entries

Rev. #: 0

Rev Date: 11 August 2009

Approval Signatures

Prepared by: Andrew Sank	Date:	8/11/09
Reviewed by: Mulef J Seful	Date:	8/11/09

Field Log Book Entries

Rev. #: 0 Rev Date: 11 August 2009

I. Scope and Application

This ARCADIS Standard Operating Procedure covers the entries needed in a field log book for environmental investigations.

This SOP does not address all of the entries that may be needed for a specific project, and does not address health and safety, equipment decontamination, field parameter measurements, sample preservation, chain-of-custody, or laboratory analysis. For direction on requirements in these areas, refer to other ARCADIS SOPs, the project work plans including the quality assurance project plan, sampling plan, and health and safety plan, as appropriate.

II. Personnel Qualifications

ARCADIS personnel participating in fieldwork and making entries into the field log book should have a minimum of one (1) year of field experience (or be under the supervision and accompanied in the field by someone who does) and current health and safety training including 40-hour HAZWOPER training, site supervisor training, site-specific training, first aid, and CPR, as needed. Field personnel will also be compliant with client-specific training requirements. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and posses the required skills and experience necessary to successfully complete the desired field work.

III. Equipment List

- Field Log Book
- Ball point (medium point) pen with blue or black ink (black preferred). A fine point Sharpie
 pen may be used if the ink does not bleed through the page and become visible on back
 side of the page. If weather conditions prevent the use of a pen, indicate so in the log and
 use an alternate writing instrument.
- Zip-lock baggie or other weather-proof container to protect the field log book from the elements.

IV. Cautions

All entries in the field log must be legible and archivable. Do not leave the field log book exposed to the elements or other conditions that might moisten the pages and smear/dissolve the entries. When not in the field, the log book should be stored in a location that is easily accessible to field crews.

V. Health and Safety Considerations

ARCADIS field personnel will be familiar and compliant with Client-specific health and safety requirements.

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VI. Procedure

- Print legibly. Do not use cursive writing.
- The name of the project, project number and project location should be written in indelible ink on the outside of the field log book.
- On the inside of the front cover, write "If Found, Please Return to ARCADIS" and include the appropriate address and phone number, the name of the person to which the book is assigned, and the name of the project manager.
- Reserve the first page of the book for a Table of Contents.
- Reserve the last five (5) pages of the book for important contacts, notes, reminders, etc.
- Each day of field work, the following should be recorded in the field log book as applicable:
 - a) Project Name
 - b) Date and time arrived
 - c) Work Site Location
 - d) Names of people on-site related to the project including ARCADIS employees, visitors, subcontractor employees, agency personnel, client representative, etc.
 - e) Describe the work to be performed briefly, and list the equipment on-site
 - f) Indicate the health and safety (H&S) level to be used
 - g) Record instrument calibrations and checks
 - h) Record time and general content of H&S briefing
 - Describe the weather conditions, including temperature, precipitation, and wind speed and direction
 - j) List periodic time entries in the far left hand column of each page
 - k) Minimize unused space on each page
- The tailgate meeting must be recorded in the log book and the tailgate form completed. If H&S monitoring is performed, record the time and results of initial and followup monitoring.

Rev. #: 0 Rev Date: 11 August 2009

- Note factual observations including collection of QA/QC samples, delays, well damage, accidents, work plan deviations, instrument problems, and problem resolutions.
- Describe work performed and how documented such as photographs, sample core logs, water sampling logs, etc.
- Describe bases for field decisions including pertinent conversations with visitors, regulators, or project personnel.
- Note final instrument calibrations and checks.
- Sign the log book at the end of each day at a minimum. Draw a line to the end of the page to indicate no further entries on that page. Sign the bottom of each page if possible.
- If an entry to the log book is changed, strike out the deleted text or item with a single line such
 that the entry remains legible, and initial and date the change. Such changes should only be
 made by the same person that made the initial entry.
- Field log book entries must be made in the field at the site, not at a later time at a different location. Supplemental entries to the log book may be made at a later date. The supplemental entry must be clearly identified as such and the entry must be signed and dated as described in this SOP.
- Problems noted in the field log book must be brought to the attention of the project manager and task manager in a timely fashion. Problems may be reported in person, on the telephone, or in a written daily log form. If daily logs are prepared and you will not be able to personally give the daily log to the project manager, send the daily log via FAX or overnight courier to the project manager and task manager.

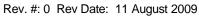
VII. Waste Management

ARCADIS

Investigation-derived waste will be managed as described in the Investigation-Derived Waste Handling and Storage SOP. A drum/waste inventory should be maintained on a pre-designated page in the field log book.

VIII. Data Recording and Management

Each page of the field log book should be scanned for electronic/digital archiving at periodic intervals. This will ensure that copies of the field notes are available in the event the field book is lost or damaged, and that field data can be easily disseminated to others without the risk of physically sending the field log book. Field log books that are full should be archived with the project files, and readily retrievable.



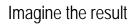
IX. Quality Assurance

Be mindful that the field log book may be produced in court. All entries should be legible (as discussed above). Entries should also be in English, unless working in a country where English is not the predominant language or you are directed otherwise by the project manager.

X. References

Not Applicable

ARCADIS

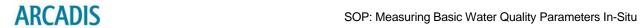




Measuring Basic Water Quality Parameters In-Situ

Rev. #: 01

Rev Date: March 17, 2004



1

Rev. #: 01 | Rev Date: 03/17/04

Approval Signatures	
Prepared by:	Date:
Reviewed by:	Date:



Rev. #: 01 | Rev Date: 03/17/04

I. Scope and Application

This Standard Operating Procedure (SOP) describes the procedures for calibrating and operating a water quality meter. Temperature, pH, specific conductivity, dissolved oxygen, ORP, and turbidity of groundwater and surface water will be measured in-situ with a combination water quality meter (Horiba U22 or equivalent). This SOP describes equipment, field procedures, materials, and documentation procedures. Groundwater quality parameters will be measured in-situ during the collection of groundwater quality samples. This SOP should be followed in conjunction with the *Groundwater Monitoring Well Sampling Procedures* SOP.

This is a standard (i.e., typically applicable) operating procedure which may be varied or changed as required, dependent upon site conditions, equipment limitations, or limitations imposed by the procedure. The ultimate procedure employed will be documented in the work plans or reports.

II. Personnel Qualifications

ARCADIS field sampling personnel will have current health and safety training including 40-hour HAZWOPER training, site supervisor training, site-specific training, first aid, and CPR, as needed. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and posses the required skills and experience necessary to successfully complete the desired field work.

III. Equipment List

The following materials, as required, shall be available during field measurement of water quality:

- Appropriate personal protective equipment as specified in the Site Health and Safety Plan
- Equipment decontamination supplies (See Field Sampling Equipment Decontamination Procedures SOP)
- Water quality meter, Horiba U22 or equivalent
- Replacement parts for the meter, including dissolved oxygen membrane
- Extra batteries

Rev. #: 01 | Rev Date: 03/17/04

- Calibration/maintenance log(s)
- Calibration solutions
- Thermometer
- Distilled water
- Disposable plastic beakers
- Fine-end screw driver
- Field logbook.

IV. **Cautions**

Monitoring probes should not be placed in sample shipping containers to reduce the risk of contaminating a sample. A representative sub-sample should be used to measure the field water quality parameters.

Calibration standards must be stored properly. Check and replace all calibration standards per manufacturer suggestions to ensure accurate meter readings.

٧. **Health and Safety Considerations**

Calibration solutions may contain hazardous chemicals. An MSDS should accompany all calibration solutions.

VI. **Procedure**

Calibration Procedures

The meter will be calibrated following the manufacturer's instructions. Calibration information will be recorded in the field logbook and a calibration log will be completed.

Operation Procedures

The meter will be operated following the manufacturer's instructions. Readings will be recorded in the field logbook.



Maintenance Procedures

The meter will be maintained according to the manufacturer's instructions. Maintenance information will be recorded in the field notebook. A replacement meter and probes will be available on-site or ready for overnight shipment, as necessary.

VII. Waste Management

Rinse water, PPE, and other residual material generated during the equipment decontamination will be placed in appropriate containers. Containerized waste and calibration solutions will be disposed of consistent with appropriate procedures as outlined in the *Handling and Storage of Investigation-Derived Waste* SOP.

VIII. Data Recording and Management

Field parameters will be recorded on the Low Flow Groundwater Monitoring Purge Log and in the field logbook for three-volume groundwater sampling in accordance with the specifications outlined in the *Quality Assurance Project Plan*.

All readings taken, calibration procedures, calibration checks, and adjustments will be documented in the field logbook. In addition, a calibration log will be completed for each day in which these procedures were conducted. These logs will be filed in the Laboratory Calibration Log Book.

All readings taken and adjustments made during calibrations and calibration checks will be recorded in the field notebook, along with the date and time at which the procedure was completed. The serial number of the meter and calibration solutions shall be recorded if applicable.

IX. Quality Assurance

Groundwater quality parameters should be measured prior to sample collection. If down-hole water quality meters are used, they will be decontaminated as specified in the *Field Sampling Equipment Decontamination Procedures* SOP (CalEPA, 1995).

X. References

California Environmental Protection Agency (CalEPA). 1995. *Representative Sampling of Groundwater for Hazardous Substances*. Guidance Manual for Ground Water Investigations. July 1995.

APPENDIX B

Field Notes

12/19/16 Lines 0630 Salimas para el Terminal Tierpo - nublado Staff - A. Colon /M. Flores 0648 legams a Termina 0100 be obtain permiss se realiza safety needing 0134 0800 Sc comenso a calibrar E) 751 y M3M 0812 comenso on love lier Frente 0831 paro de llover 0857 Se termino de calibrar el Y51 0900 varios a comprer Hide 0912 llegaras 0916 Se haldo con Bagnel pero notificar el area de trabajo se colecto EB-121916 201 0958 Inbing se poss en never TB-121916 Se collecto muestra MW-P120) 1110 120% Se collecto muestra MW-P122 sallmos a almorza 1221

1250 Hegans at Terminal 1421) se volleuto mostra /MW-P123/ 1445 Sc monto Gomba peristartica us poso mm- P124 so se pudo se va a hace a 1545 Se collecto mester Imm-Plan 1427 Se collecto mostra mu-121 1645 Se Serro [FB-121916] 1650 Salinos del formano para a oficina lleganos a la oficina 1706 pera Subir carro y poner bateries a carga Terminares Nota sc 1730 habis con Rita para entreg mestray wartes y sueurs Rite in the Rain.

Martos 12/20/16
Duplicado [Dupoo1] de este Martes 12/20/16 0620 Stapf Arcadis MIF/A.C weather cloud: photo 0641 Salinos para el terrina) 1516 Se tono mestra (MW-AD-03) 1525) 5c cerro el [FB-122016] perchol se obtavo permiso de Nota M. H. del pozo so ciamo grabas debido a moho 0710 be realize safety meeting 1548 105 Frimos a entroper 0,51 de termo de colibra 45) 7 MBA Mucstras 0805) se pros el TB-122016 con 1554 llagaros of laborators Oriz Galinos a comprar 1615 Se entregara muestras 1645 legans a la OFILIRE bara bouse a cardan earlos. 0420 Regresamos 1700 nos Fringe 0435) Se collecto (EB-127016) 0918] se collects mestra [MW-PITT] 1009 se toro mestra /mw- P118/-1113) Se tomo mestra /mw-83A 1124 nos Frimos a almorzar 1150 Regresamos 1200 Lomerso on Nover 1212 paro de llove Au 1312] Se tono muestra / MW-1001 1320 El ADI tiene producto 1430) sc tono mestro [MW-57A] y Rite in the Rain.

Microbes 12/21/16 Miercojos 1255 5c come-so 5ctup en D625 Staff: Arcado " weathe TSmay MW-P116 Obyz ballmos para el Terminal 1405 se tomo muestra (mu-PIIU) 0653 llegamos al Terminal 0710 se obturo permiso por 1521 Se tomo muestra LMW-PIDI 1555 SC POSO ON ARMOR TAC 1809 50 tomo mestra JAW-65A) Oscar Votozne 0730 de realier charla de 1615 Se cerro [FB-122116] Begnridas 1626 Frimos a dexargar 61sters 1645 de termo de desurgar 0754 Sc priso en never 178-12216 0815 se termino de colibrar el 1650 nos Fumos para la oriz MSA y YS) 1706 lleganos a la OFicin 0828 Salmos a comprar 0846 hiels 0846 Regresamos para nonta cisturna 0917) Se coleuto [EB-122116] del Tulsing 0959 Se. colecto muestra MW-4382) 1056 Sc tomo mustra [MW-AD-4] Tigy Se tomo mustra MW-33A 1155 nos Frimas a almorea 1216 Frimes a almacen a unsuar tubing 1248 legans at temps Rite in the Rain.

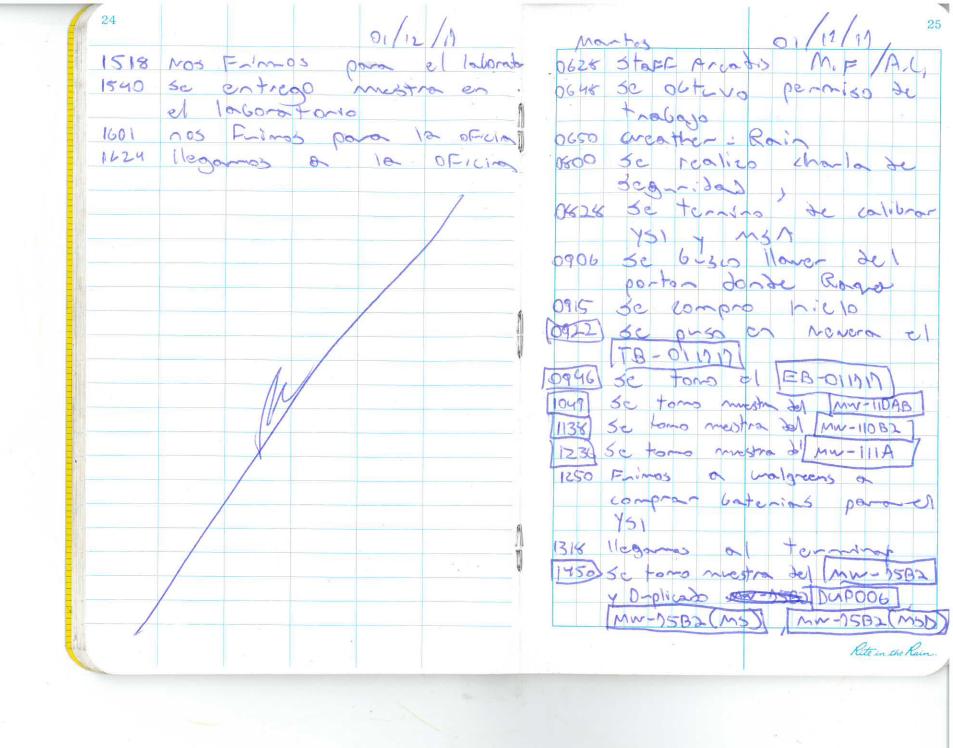
Tream Jueros 0630 Starp Arcodis A.C. /M.F 1315 se entrego muestras weather surry 1340 005 Frimos para 12 0644 legares at Terminal 1400 lleganos para preparaj 0703 3e obtavo permiso 0714 de realiza sacety meeting neveras a condon combo 0154 Se termino de lalibra 0510 de pro en revera TB-12226 OSIM Salinos a comprar 7 hicle y gasoline paraguou 0828 Negamos al temmed 10842 Sc tono [EB-122216] del Tubing 0938 Se Tono muestra [MW-15A]. 1023) se Tomo mesma [mw-15B2] 1142 50 tons mustra [MW-15B] y Duplicado [DUPO02] [MW-15B(M5) MW-15B (M3D) 150 Se cerro FB-122216) 1154 nos Frimos a al morzar 1225 Regresans paro Regoger pasma y bushara casaras pera entregan 1254 nos Frinos para el laborator y se recogioron Gotellas Rite in the Rain ...

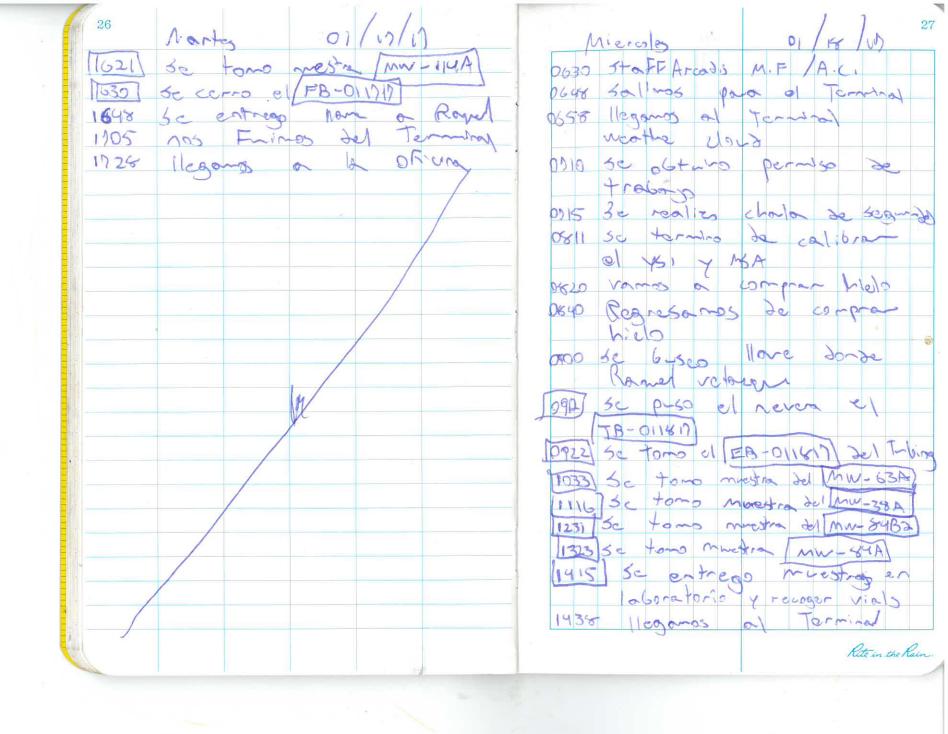
10	11
10 Montes 12/25/14	Martes 12/27/16
0630 STOFF Arcods A.C. /M.F	1628 salings a moran high
weather's Nublado	1649 nos Frinos para la
0545 Negares a) tennina)	oficina
0,000 se obtivo permiso de	105 llegomos a la oficia
trabays	
0722 se realiza charta de seguidos	
0815 60 terms to calibra 45)	
0625 Gallnos a compra hielo	
0840 ilcomos of mw 18D	
DENS SC Phso on Nevera 21	
JB-122716)	
10854) & toro of [EB-122716] tel Tubing	
10934 Se tomo mustom MW-18D	
[1029] So tons mestra [MW-47A]	
1118 So tono mestra [MW-91A]	
1125 nos Primos a almanos	
1145 Regresonos	
[1253] Se toro mestro del MW-88A]	
1346 Se tono mostra del mw-98A	
1553 5c to no mestra ser Mw-30A	
1558 3c coro [FB-12276]	
1615 52 termino de Revorse	
	Rite in the Rain.

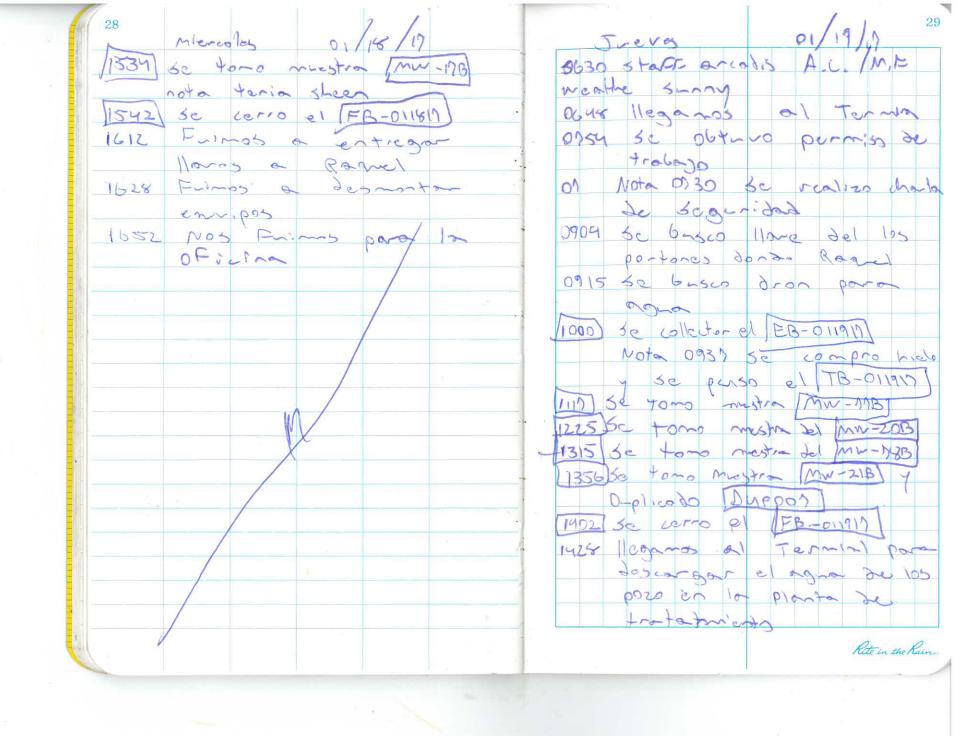
14 Theres 12/29/16 Mortes 0630 Staff Arcadis M.F. /A.C STAFF Arcados M.F /A.C. 0630 OGHZ NOS Frings para el weathe samy 0645 Se Basco tubing Termina 0709 obtavions permissos de nos Frimos para al traba ps terminal 015 3c realiza charla de se obtuvo permiso de 075 traba p Sconnidad 0421 Sc calibro el mon y ones be realize charle de segurido. 0825 be termino de colibrar el 13M Prinos a compra 457 1 MBA 4,010 0835 11copnos al terma 0833 nos Palmos a comprar hield y hechan gasoning 0840/ Se puso en nevera 050 leganos al Terminas TB-0103171 0878 Se tomo el [EB-010310] des (0456) be pro en nevera el 18-12296 0906] Se tomo el [B-122916] 0935 Sc tomo mestra del 10950 30 tono mestra [mw-86A) 1044 Se toma mostra [MM-MPBA] MW-B9 0945 11 1800mos 21 EB-103 113) The tomo muy [MW-DP5] 102) Se tomo mostra MW-EB103 1142 Se cerro el /FB-12296 1126 Sc tom mestra mu-EBION 1200 nos Fulmos a al moras 1136 105 Fritos o olmoro 1220 Regresonos paro dejas 1200 Registranos equipos y preparal montra 1205 (108am) en EB105 (adesa) 1400 SE entegora mestras 1345 Sc tomo mustra MW-EARS Rite in the Rain.



Merco 15 01/11/17 There 0630 Staff A16235, A.C. 0625 Starp : Arcodis A.C. MF weather cloud weather rain 06 49 11cgans al Terrind 0650 Hegans at Temmy 01/10 se obturo permiso 0) 06 se obtavo permiso de trabajo de Trabayo 0720 be realish that be pro se realies charla de Segunidad Segnal das 0750 Sc compre hialo 0)25 comoso of llover frate 0130 Be colibro el m50 00501100 0.800 Ticgans a) 0045 deso de Nover 0820 Se colecto EB-011217 8828 Continua Moriando Se mata oxio se puso ellTB-over Va a Suspenden por 0941) St tomo mestra [MW-7602] 1035 Se tons mostin MM-701 la ocida 0850 Vomos pa-a 1040 Frimos a 6-3 car 110005 con Ragrel pero co se comercia has give podit a no operator and nos habra 1142 Se (005 540 Nave Richi 245 Se tomo mesta del Mr 13A 1346 Sc tono moto Del Mm-1502 1438 Se tomo mestro del IMW-37A) 1448 Se Serro EI FB-01121) Rite in the Rain.









1-1/2"=0.09

Well casing Dia.: _

Project Name:

Location: Arcadis PR Team: Well ID: M-2.1R

1-1/4"=0.06

Groundwater Monitoring Field Data Sheet 5002,1605A Project Number: _ Weather: _ WELL CASING VOLUMES (per foot of water column) 3-1/2"=0.5 4"=0.65 6"=1.47

			Well Data		
Well Depth:	6260	ft. TOC	Gallons per foot:	0.14	gal
Depth to Water:	11.80	ft. TOC	Gallons per well casing (Well Volume):	8.92	gal
Depth to SPH:	NO	ft. TOC	Three well volumes (x3):	26,78	gal
Water Column in Well:	55.80	ft.	Placement of Pump Intake:	90	ft. TOC

3"=0.37

2-1/2"=0.26

Well Purging Information and Field Parameters Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number ____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1321	11.47	toc/mm	Initial	-						
(330	11.88	Koc puns	9,66	1.06	21.59	2155	-16.5	1008	44	
1337	14.88	100/m	1800	6.92	26.82	3368	-11.5	0.993	2/1/2	
1348	11,88	ilea/m	2104	6.99	26.02	314.9	-16.5	0.513	1.11	
1356										

	San	npling Data	1356
Sampling Method: Peristaltic	Pump-Number:	Other:	Sampling Time: 4402
Color: Grey Light	nt Grey Light Brown Brow	wn Other:	
Odor: Mild Strong Spe	cify: None	Visual Turbidit	:y: 🗆 Clear 🔲 Low 🔲 Medium 🔲 High
Sample Parameters	Container Description	Preservative	Filtered y/n
vois,	2 vial you	HCI	N
DRO /ORO	2 500ml	N	N
5 VO(3)	2 250 ~	H	N
metals / merony	27 c50 mc	HNO ₃	N
Dissolved motals	1 \$50 125 ML	K	N
Remarks: 0,0 On	se tomo	duplicado	>apoo) / FB-011911 -141
Sampleric) Signature:		10	

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Project Na	ame: Am.	n Ten	minal		Projec	t Number:	E002	1605B		
Location:	Bay	any f	B.				19/17			
	R Team:		, M.F							
Well ID:	MW - 78B	Well	casing Dia.:	2"		Weathe	r: 5-1-	~		
_				G VOLUMES (1		
1-1/4"=0.06	1-1/2″=0.0	9 2″=0.1	1	/2"=0.26	3″=0.33 Well Data		3-1/2"=0.5	4″=0.65		6"=1.47
Well Dept	th:		8)	ft. TOC	Gallons	per foot:			0.16	gal
Depth to			10	ft. TOC	The second second second		sing (Well Vo	lume):	1218	gal
Depth to			VD	ft. TOC	A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ell volumes			38.00	gal
Water Co	lumn in Well:	-	19.9	ft.	Placemo	ent of Pump	Intake:	1 1	41	ft. TOO
			Well Purging	Informatio	on and Fie	ld Paramet	ers		/ 1	
Well Purg	ging Method:	Peristaltic Pump			Monsoc	n Pump - Nun	nber		Other w	inter
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
12321	2.10	Ich / west	inicial	-						
1246	13.05	(ac) m	12	6.81	50.77	315.0	-12.6	1.366	1.27	
1538	13.11	16-6/m	24	2.01	09.25	395,8	-16.8	2.432	1.33	
1310	13.11	(belm	36	6.90	26.38	404.0	-50-3	2.463	1.81	-
1315										/
										/
										-
										//
		L		Compli	ng Data					1/
Sampling	Method: Per	istaltic Pump-N	lumber:	200	Jacob Committee	r:		Sampling	Time: 13	:15
	clear Grey [-/			
							: Clear	Low	dium 🗆 Hi	gh
	Parameters	Cont	ainer Descripti	ion		ervative			ed y/n	
VOU'S		1	121 40m		HCI			N		
D80/	080	2	500 ml		V			N		
SVOC		2	250 MZ		N			N		
Metal	1- Mercing	1	USO ML		HNO	3		N		
. 1	nod metals	1	125 ML		N			N		
Remarks		0,0 pp	~							
	(s) Signature:	Nu.								
		V00								

ASTM-D6771-02: Stabilization of Parameters

рН	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Proiect N	ame: Pm	no Ten	Nens		Projec	t Number:	E002	1605B		
Location:	ame: fm	Marran	P.8		Date:	OI	(17/1)			
Arcadis F	R Team:	AL	MA							
Well ID:	MW-201	3 Well o	casing Dia.:	2"		Weathe	: 30000			
-						vater column)				
1-1/4"=0.00	5 1-1/2″=0.0	99 2″=0.10	5 2-1	/2″=0.26	3"=0.3 Well Data	7	3-1/2"=0.5	4″=0.65		6″=1.47
Well Dep	th:	8	4	ft. TOC	Gallons	per foot:			0.16	gal
Depth to			22	ft. TOC	The second second second		sing (Well Vo	lume):	12.06	gal
Depth to	SPH: olumn in Well:	- N	1.75	ft. TOC ft.	100000000000000000000000000000000000000	vell volumes ent of Pump			38,28	gal ft. TO
water co	numm m wen.		1.73		Flacelli	ent or Funi	Tillake.			1
Well Pur	ging Method:	Peristaltic Pump -	Well Purging					га	Other wh	enter
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1137	4.25	Inlan	Michal							
150	4,45	100 mm	13 OL	12.11	20.02	201.6	-13.1	1,404	164	/
1203	9.45	loc/m	266	6.99	25.68	332.0	-17.7	1.427	1.51	/
1216	4 45	100 m	39 w	6.98	25.62	383.0	-18.6	1.425	1.53	
122										-
			1	(
			- Y						-	-
_				-						/
		1			line Date			-		V
					ling Data			C !!	- 15-	2017
	g Method: Per							Sampling	Time:	01120
	dear ☐ Grey			Brown						
Odor:	☐Mild ☐Strong	g Specify:	None		Visu	al Turbidity	: Clear	Low Me	dium Hig	z h
	Parameters		ainer Descript	ion	Prese	ervative		Filtere	ed y/n	
voc		,	evials		HCI			N		
DRO	1080		~ 500 m	1	N			N		
500	u's	5	1 250 M		1	(N		
meta	15 / mercan	1 2	×1 250 ~	۵	HNO	3		N		
Dizen	ved metal		1.5	^	N			N		
Remark	^		1,000		14			.,,		
	r(s) Signature:	٨								
Sample	(5) Signature:	100							-	
			ASTM-D	6771-02: Sta	bilization of I	Parameters:				

рН	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Temp

± 0.2 °C

± 0.2 phu

Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

roject Na	ame: Puna	Termin	1				B002.1			
ocation:	Boyon	M. 9 cm			Date:	01/	19/0			
Arcadic D	P Toam:	A.C. 1	ME							
Well ID: _	MW - 11B	Well o	asing Dia.:	2"		Weathe	r: Shan	1		
						vater column)				
1-1/4″=0.06	1-1/2"=0.09	2″=0.16	2-1	1/2″=0.26	3"=0.3 Well Data		3-1/2"=0.5	4″=0.65	6	5″=1.47
Well Dep	th:	106	OP.	ft. TOC	Gallons	per foot:			016	gal
Depth to		6	80	ft. TOC	Gallons	per well ca	sing (Well Vo		16.00	gal
Depth to			-0			vell volume			4804	gal
Water Co	lumn in Well:		010	ft.	Placem	ent of Pum	p Intake:	-		ft. TC
Well Pur	ging Method:	Peristaltic Pump -	Well Purging				nber		Other wh	No
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1020	6.89	168 × 22	Micial	-	2.		10.00	_		
1036	12.98	lauxm	1600	6.36	26,02	260.3	10.5	0.521	7-21	/
052	13.00	16h ma		2.36	25.98	301.9	151.0	0,541	CPi	
110%	13.10	IULX	4800	7.42	26.04	341,2	115.5	0.551	1.35	-
		1-								
		/								
		1		Samp	ling Data					
Sampling	g Method: Per	istaltic Pumn-N	lumber:			er:	1	Sampling	Time:	15
	Clear Grey [
				L Blown			/: Clear	l ou DMor	dium 🗆 Uic	rh
	☐Mild ☐Strong Parameters	Cont	ainer Descript	ion	Pres	ervative	/Cleal	Filtere		311
VOC	<		2 vial us	10~~	HCI	C.		N		
-	1080		2 500 ~		N			N		
2	v		2 250 ~		~	1		N		
Srac			1 250	·	HNC) ₅		N	-	
Meto		1		45	HINC	<i>)</i> 5		N N		
Dissol			1 125 ~		1	-		N		
Remark		luch								
	(s) Signature:									

Eh or ORP

± 10% of the previous reading or

± 1.0 NTU whichever is greater

± 20 mV



roject Na	me: Pura	As and	PR		Projec	t Number:	E002	.1605B	_	_
ocation:		Dogwood			Date:	0.	. 0 1 . 1			
Arcadis Pi	R Team:	ALCI	////	21.		10/10/46				
Vell ID: _	MW-17B	Well c					252	77		
			WELL CASING	VOLUMES	per foot of w	rater column)				
-1/4″=0.06	1-1/2"=0.09	2″=0,16	2-1		3"=0.3" Well Data	7	3-1/2"=0.5	4″=0.65	(5″=1.47
Well Dept	h:	50	2.10	ft. TOC	Gallons	per foot:		1. V Ti.	0.16	gal
epth to			.22			4 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	sing (Well Vo		8.30	gal
epth to			ND			vell volume:	Table 1 A Street was		CP.P5	gal
Water Co	lumn in Well:		51.88	ft.	Placem	ent of Pum	o Intake:	-	35	ft. TC
		1	Well Purging	Informati					1	,
Well Purg	ing Method: 📑	Peristaltic Pump -	Number		Monsoo	on Pump - Nun	nber	\Box	Other Wh	aler
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
500	4.22	1.00-L/m	Inicial	-						
508	16.45	1.00c/m	800	1.22	25.51	268,5		0-523		
1516	16.60	1.000 /mm		6.48	25,60	335.8	-	0.541	1.23	1
524	16.70	1,0ch/mg	24 00	6.15	25.16	369.5	1022.8	0.551	1.06	
5							1			-
				10			1			
				PUT						-
										/
								1		/
				Samp	ling Data					
Sampling	Method: Per	istaltic Pump-N	lumber:		Othe	er:		Sampling	Time: 15	34
	 ☐Clear ☐ Grey [
	Jereal ☐ Grey [r: Clear]Low□Me	dium Hi	gh
	Parameters	Cont	ainer Descript	ion	_	ervative			ed y/n	.
VOC.		2	The second second	10	HCI			N		
1	OKO	9	500~	V	N			N		
500	63	2	250 ~	_	~			N	-11	
met	als I mere	ing i	150	-2	HNC	D ₃		N		
Dis	solved ma	etals			~	A		N,		
		0.00	Motor	se pl	servo	sheen		9		
Remark	s:	A	10100					-		

Eh or ORP

± 10% of the previous reading or

± 1.0 NTU whichever is greater

± 20 mV

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Conductivity

3% of reading

Temp

± 0.2 phu

± 0.2 °C



Conductivity

3% of reading

Temp

± 0.2 °C

± 0.2 phu

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

Project Na	ame:	Puna	Termo	7	Projec		E002			
Location:	Boyan	on f	O		Date:	01/1	8/17			
Arcadis P	R Team: A.	. M.F								
Well ID: _	MW- 84A	Well o	asing Dia.:	2"		Weathe	: Sunn			
			WELL CASIN	G VOLUMES	(per foot of w	ater column)				
1-1/4"=0.06	1-1/2″=0.0	2″=0.16	2-:	1/2″=0.26	3"=0.3" Well Data	7	3-1/2"=0.5	4″=0.65		6″=1.47
Well Dep	th:	55	05.70	ft. TOC	Gallons	per foot:			0,16	gal
Depth to		S	.03	ft. TOC	Gallons	per well ca	sing (Well Vo	lume):	8.02	gal
Depth to			10	ft. TOO		ell volumes			30.00	
Water Co	lumn in Well:		0.17	ft.	Placemo	ent of Pump	Intake:		30 00	
			MI-II Donnin	- Informati	ion and Fig	ld Davanat	0.00			
		/	Well Purging					_	1	
Well Pur	ging Method:	Peristaltic Pump -		383	Monsoc	n Pump - Nun	nber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1246	5.03	160ml/mw	inicial	-	2.4	20.			0.01	
1249	4,94	100 ml m	480	6.61	21.34	319.1	-32.2	0.767	0.01	
1252	4,94	160m1/m	200	6.65	21,37	1.015	~ 40.7	0.768	050	-/
1255	4.94	100m/m	1440	668	21.43	143.6	-40.7	0,769	0.49	-/
1258	4,17	160m/ mm		6.)2	21,44	96.8	-31.1	0.00	0.39	
1301	9.98	Haml mor	2400	6.02	21.53	15,2	-40.1	0.110	0.35	/
1304	4.98	160ml mm	2800	6.13	21,31	58.4	-30,	0.767	0.34	/
(30)	4.98	loom m	3360~	6.13	21.19	40.0	-	0.100	0.32	/
1310	4.94	160mm	3813			4013	30,1	013	9.52	<u> </u>
	_/				ling Data					
	Method: Per							Sampling	Time: 13	ر کور
Color:	Clear Grey [Light Grey	Light Brown	Brown						
Odor:	Mild Strong	g Specify:			Visu	al Turbidity	: Clear	Low Me	dium 🔲 Hig	gh
Sample I	Parameters		ainer Descript		Prese	ervative			ed y/n	
U-RO		3 1	rials 40	me	1401			b		
voc's)~L	HCI		4	N		
DRO/C	ORO	7	500 mc b	V C	N			N		
540	رئی,	2	150 mL		N			N		
meta	15 / mercur		150 ML		HNO	3		N		
D 1350	hed Moto	nls 1	125 ML		N			N		
Remarks	5;	0.0 ppm								
	(s) Signature:	M								
Juli pici	(0) 0.8									
			ASTM-I	06771-02: Sta	bilization of I	Parameters:				

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or



рН

± 0.2 phu

Temp

± 0.2 °C

Conductivity

3% of reading

Dissolved Oxygen

 \pm 10% of reading or \pm 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

Project Na	ame: P	nna	Terminal		Projec	ct Number:	EX	02.1605.	B	
	Bynn				Date:	(01/18	11)		
	R Team: P									
	WM - 20		asing Dia.:	211		Weathe	r: 3 m	iny		
					(per foot of w			(
1-1/4"=0.06	1-1/2″=0.0	9 2″=0.10	1	1/2″=0.26	3″=0.3° Well Data		3-1/2″=0.5	4″=0.65		6″=1.47
Well Dept	th:	18	50	ft. TOC	Gallons	per foot:			0.16	gal
Depth to		2.9	52	ft. TOO		Processing the second second	sing (Well Vo	olume):	255	gal
Depth to		N		ft. TO		vell volumes			2.67	gal
Water Col	lumn in Well:	-15	18	ft.	Placeme	ent of Pump	Intake:		10.50	ft. TO
Well Purg	ging Method:	Peristaltic Pump -	Well Purging						Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1152	2.52	(00ml/m	Inicial	_						
1155	9,15	Kan 1/mm	480	5,51	21.62	361.3	-6,4	0.455	1.20	
1158	4.82	160m1/mm	960	5.56	21.35	396.2	- 34.7	0.455	0.94	
1051	5.53	160m1/mm	1440	5.56	21,41	420,1	-31.6	0.458	0.18	
1204	,6.32	160~1/m	m cse1	5.57	21.36	438.6	- 32.9	0.460	0.68	
1201	6.16	160ml/mm	2400~1	2.28	21.31	450.6	-38.1	0.461	0.65	
1510	7,46	160 ml/m	5800ml		21.40	459.8	2000	0.969	0.59	/
1213	4,05	100mlm	3360~1	3.58	27.46	461,1	-31,9	0.465	0.28	
				Samp	ling Data	1				/
Sampling	Method: Peri	staltic Pump-N	umber:		Othe	r:		Sampling	Time: 12	.31
	Clear Grey [
	Mild Strong		Nor				: Clear	Low	dium 🔲 Hig	gh
Sample P	arameters	Cont	ainer Descript	ion	Prese	ervative		Filtere	ed y/n	
VOLI			vials u		HCI			N		
DRO /	ORO	2	500 mL		N			N		
Svoc	.3	4	250 ML		N			N		12
Merc	my / me	tals 1	250 MI		HNO	3		N		-
0,350	lved Med	rals	1125 m	1	~			N		
Remarks	:	0.000	2							
		A								

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or ± 1.0 NTU whichever is greater



Project Na	ame: Pum		mines 1		Projec	t Number:	E002	,1605B		_
ocation:	Bayo	Com	P.B		Date:	01/	18/17			
	R Team:A	.L. MIF								
	MW-38A	Well c	asing Dia.:	211		Weathe	r: 3n	27		
vvenib	701-0				(per foot of w					
1-1/4"=0.06	1-1/2"=0.0	9 2″=0.16	2-3	1/2"=0.26	3"=0.3 Well Data	7	3-1/2"=0.5	4″=0.65		6″=1.47
Well Dept	th.	25	5.52	ft. TOO	Gallons	per foot:			0.16	gal
Depth to		H	145	ft. TOO			sing (Well Vo	lume):	3.36	gal
Depth to			ND	ft. TO		vell volumes			10.10	gal
Water Co	lumn in Well:	21	.05	ft.	Placem	ent of Pump	Intake:	-	15	ft. TO
		1	Well Purging	Informat	tion and Fie	ld Paramet	ers			
Well Purg	ging Method:	Peristaltic Pump - I	Number 123	83	Monsoo	on Pump - Nun	nber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1036	4.45	160ml/m	inicial							
1039	6.21	my frage	440	4.31	21.41	465.4	~21.2	0.208	0.70	-/
1042	2.07	160 ml mm	960	4.28	21.40	461.4	-40.3	0.206	0,92	
1045	1.14	(Com/me.	1440	4.39	24.14	465.9	-41.2	0.206	0.89	-/-
1048	2.18	160ml m	1920	4.38	28.21	413.5	-39.5	0.206	0.83	\vdash
			2400	14						-
				In						
										/
					40.1					Į,
	Method: Per	/	15	-	oling Data			Campling	Time: 11	V ₂
									Time. 11	
	Clear Grey [I Brow			: Clear	Low DMe	lium 🗆 Hi	ah
	Mild Strong						. Clear			D.,
	Parameters	Cont	ainer Descript	ion ~L	Pres HC\	ervative		Filtere	u y/n	
VOC'S		à	vial 4		HCI			N		
DRO	1080	2	500 mc		N			N		
500	c's	2	250 m		N			N		
meta	15 Mercum	1	250 m	•	HNC)3		N	-	
D 135	atem bank	15 1	125 mu		N			N		
Remark	s: 0.0	160-10								
		N. I								
Sampler	(s) Signature:	M								

Dissolved Oxygen

 \pm 10% of reading or \pm 0.2 mg/L, whichever is greater

Conductivity

3% of reading

Temp

± 0.2 °C

± 0.2 phu

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or



Conductivity

3% of reading

Temp

± 0.2 °C

pH

± 0.2 phu

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

ocation: _ Arcadis PR Vell ID: 1/4"=0.06 Well Depth Depth to V Depth to S Water Colu	Vater:	Well ca	asing Dia.:	G VOLUMES 1/2"=0.26	(per foot of w 3"=0.3" Well Data Gallons Gallons	Weather vater column) 7 per foot: per well cas vell volumes	3-1/2"=0.5 sing (Well Vo		0.65	5″=1.47 gal
Arcadis PR Vell ID: 1/4"=0.06 Well Depth Depth to V Depth to S Water Colu	1-1/2"=0.09 1-1/2"=0.09 The second of the	Well ca	WELL CASIN 2-1 0.60 91	G VOLUMES L/2"=0.26 ft. TOC ft. TOC ft. TOC	(per foot of w 3"=0.3" Well Data Gallons Gallons Three w	per foot: per well cas	3-1/2"=0.5 sing (Well Vo	4″=0.65	0.65	gal
Vell ID: 1/4"=0.06 Well Depth Depth to V Depth to S Water Coli	1-1/2"=0.09 1: Vater: PH: umn in Well:	Well can 2"=0.16 2"=0.16	WELL CASIN 2-1	ft. TOC ft. TOC	(per foot of w 3"=0.3" Well Data Gallons Gallons Three w	per foot: per well cas	3-1/2"=0.5 sing (Well Vo	4″=0.65	0.65	gal
-1/4"=0.06 Well Depth Depth to V Depth to S Water Colu	1-1/2"=0.09 n: Vater: PH: umn in Well:	2"=0.16 2 0 2 0 1)	WELL CASIN 2-1	ft. TOC ft. TOC	(per foot of w 3"=0.3" Well Data Gallons Gallons Three w	per foot: per well cas	3-1/2"=0.5 sing (Well Vo	4″=0.65	0.65	gal
Well Depth Depth to V Depth to S Water Coli	n: Vater: PH: umn in Well:	20 2 N 1)	.60 .9) D	ft. TOC ft. TOC ft. TOC	Gallons Gallons Three w	per foot: per well cas	ing (Well Vo	lume): 11.43	0.65	gal
Depth to V Depth to S Water Colo	Vater: PH: umn in Well: ing Method:	2 N 13	.97) D .63	ft. TOC ft. TOC	Gallons Three w	per well cas	sing (Well Vo (x3):	lume): 11.45	201	
Depth to V Depth to S Water Colo	Vater: PH: umn in Well: ing Method:	2 N 13	.97) D .63	ft. TOC ft. TOC	Gallons Three w	per well cas	sing (Well Vo (x3):	lume): 11.45	2-8I	gal
Depth to S Water Coli	PH: umn in Well: ing Method:	17	D .63		Three w	ell volumes	(x3):	34.30	46	
Water Coli	umn in Well:			ft.	Placeme	ant of Dumn	and the state of t	- 11/2 1		gal
Well Purgi		Peristaltic Pump - N	Well Purging			ent of Pump	Intake:	- C-	11.35	ft. TO
	Donth to	The second of the second	lumber				ers ber		Other	
Time	Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1002	2.99	160ml/mm	Inivial	-	- A - 1					
1005	3,60	160m/m	480	4.00	21.24	418.4	3.8	0.423	68.0	
1004	3,80	160m1/m	960	4.06	21.01	4261	-6.1	0.422	0.16	
1011	4.00	160m1/m	1440	4,05	26.99	435,3	28.9	0.493	0.67	
1014	4.20	160min	1920	4.06	21,30	440.4	-21.1	0.423	0.66	
1017	4.40	160ml main	2400	4,06	21.11	4458	1.25-	0.423	0.69	
										/
				Samp	ling Data					
C	Method: Peri	staltic Dumm N	umbor: 15 2			r.		Sampling	Time: 10	33
	elear Grey [
Odor:	Mild Strong	Specify:	NONE				:clear	Low Med		311
Sample P	arameters	Conta	iner Descript	ion	Ho	ervative \		Filtere	d y/n	
Voc3		2	vials u	0 mu	HCI			N		
DRO	080	2	500 mL		N			N		
SVOL	3	1	250 ~	L	~			N		
meta	5 / Merch	7 1	150 m	1_	HNC)3		N		
	leed metals	1	125 m	_	M			N		
Remarks		99 0.0	m							
	s) Signature:	As								
Jampiel	3/ 3/Bilatare:	B) Ala			abilization of					

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or



Project Na	me: Pu	ma Ter	(arm		Projec Date:	t Number:	E003	L, 1605B		
Arcadis PR	R Team:	A.L. MF	3							
Well ID: /	MW-114	A_ Well	casing Dia.:	2'		Weathe	er: Sha	7		
1-1/4"=0.06			WELL CASING	/2"=0.26	3″=0.37		3-1/2″=0.5	4″=0.65		6″=1.47
Well Dept Depth to S Depth to S Water Col	Water:		14.30 2.95 VB	ft. TOC ft. TOC ft. TOC ft.	Gallons Three w	per foot: per well ca rell volume ent of Pum		olume):	0.16 1.87 5.44 8.60	gal gal gal ft. TOO
Well Purg	ging Method:[Peristaltic Pump	Well Purging				ters		Other	
Time	Depth to Groundwate (ft)	Flow Rate	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1523	2.95	160ml/m	inicial			D10 A	10=3	1 (~)	2.00	-
1526	3.40	160ml/m	0.10		26.22	319,7	Tara 2	1.608	0.10	+/
1529	3.80	160ml /m			26.10	260.7	-	1.591	0.37	1/
1532	9.00	160 ml/m	1440		25.65	2477	43.0	1.590	03)	1/
1535		160 ml/m		UIT	25.71	227.9	1.52-	1.515	0,34	
1538	4.05	160~1/~	3360		25.29	ECIS	- 50.8		0.34	
1544			10 10 10 10 10 10 10 10 10 10 10 10 10 1	6.45	25.79	205.2	- 54,2		0.33	
(541)	-		Dan-		26,14	1583		1.430	0.3	1
1550	4.05	160m1 Am	4800	Sampli	ing Data	139.1	-48.1	1,301	0.31	
1553		eristaltic Pump		1383	Othe				Time: 16	121
		Light Grey		IL DIOWII	Visu	al Turbidit	v. Clear	Low Me	dium 🗆 H	ligh
	Parameters	ong Specify: Cor	ntainer Descrip	tion	_	ervative			ed y/n	
VOL			Lvial 40	~	HCI			N		
DBO	1080	2	500 m		N			N		
5 vs	1	2	150 m	1	N			N		
	Section (Associated	-Una II	250 ~	L	HNC) ₃		N		
met.	solved M	the						N		
		0,0 ppm								
1555	r(s) Signature:	1.00	5160 6	54 26 D6771-02: Sta	oz 13	S.I Parameters:	- 33 1	1209	031.	
1557	1- 1		issolved Oxygen				h or ORP	Turbidity		
± 0.2 phu	Temp ± 0.2 °C	Conductivity D 3% of reading	± 10% of reading or	± 0.2 mg/L, w	hichever is a		20 mV	± 10% of the pro ± 1.0 NTU which		



Conductivity

3% of reading

Temp

± 0.2 phu

± 0.2 °C

Dissolved Oxygen

 \pm 10% of reading or \pm 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

ocation: Arcadis PR Vell ID:	Reyons Team: TW- 15B2	A-C /	IME		Date:	01/1	1/11			
Vell ID: <u>/</u>	Team:	A-C /	ME		-	01/1	1/1/			
Vell ID: <u>/</u>	nw-75B2	Wellc								
		VVEII C	asing Dia.:	2'		Weather	541	14		
1/4″=0.06		_	WELL CASING	S VOLUMES (per foot of wa	ter column)		,		
	1-1/2"=0.09	2″=0.16	2-1	/2″=0.26	3"=0.37 Well Data		3-1/2″=0.5	4″=0.65		6″=1.47
Vell Depth	:	5(00	ft. TOC	Gallons				0.16	gal
epth to W				ft. TOC			ing (Well Vo	lume):	35.52	gal
epth to SF			(0)	ft. TOC	1	ell volumes			39	gal ft. TO
Vater Colu	mn in Well:		/	ft.	Placeme	nt of Pump	ilitake.			
			Well Purging						Other Wh	الماع الم
Vell Purgii		Peristaltic Pump -	Number Cumulative		Monsoo	n Pump - Num	bei			
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
404	2.00	12clpm	Inicial							
1412	2.28	1,501, mm	45,120	-	21.47	228.9	-64.2	1,126	2,20	
420	2,28	1.54 m	260 24.0			301.1	-51.8	1.163	1.44	
1424	2.28	1.5ac/m	3664	6.89	25.83	312.4	-56.7	1.108	1, 19	/
				10						/
				W L						
			-	W.						
-										
				Samul	ing Data					
			Lorente was	4000				Sampling	Time: 14	50
	Method: Peri						,			
	Clear Grey [Brown	Utner.		Dalant	li Divis	نال السالة	ah
Odor:	Mild Strong						: Clear			Bii
	arameters	Cont	ainer Descript	ion	Prese	ervative		Filter	ed y/n	
vous		2	rials 4		HCI			N		
080/0	00	2	500 ML		N			N		
1			250 ~1		N			N		
3400			250.00		HNO	3		N		
Metals	11	()	250.		11110	3		N		
D 1550			1W-15B2	(ms)	/m	w- 15B	2 (MSD)		10000	
Remarks:	A	la l			1.	7-0	1 3-3	1	-	
Sampler(s) Signature:	1								

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or



Temp

± 0.2 °C

± 0.2 phu

Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

Turbidity

± 10% of the previous reading or

± 1.0 NTU whichever is greater

Eh or ORP

± 20 mV

Project Na	Byon	Termon	1		Projec	ct Number:	E002.	1605B		
Location:	Baran	n P.8			Date:	01				
Arcadis P	R Team:	AG	MF		-470497					
Woll ID:	MW-111A	Well	asing Dia :	2 "		Weathe	r: Fran	^		
Well ID	11(1)	vvcii c			S (per foot of w)		
1-1/4"=0.06	1-1/2″=0.0	9 2″=0.16	1		3"=0.3" Well Data		3-1/2"=0.5	4″=0.65		6″=1.47
Well Dept	th:	1).		ft. TO	Gallons	per foot:			0.16	gal
Depth to		14.	9.30	ft. TO			sing (Well Vo	lume):	1.26	gal
Depth to			110	ft. TO		ell volume			3.80	gal
Water Co	lumn in Well:		1	ft.	Placemo	ent of Pump	Intake:	19	13,00	ft. TO
Well Purg	ging Method:	Peristaltic Pump -							Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1156	9.30	160ml/mm	Irridal	-						/
1159	9,77	160ml/m	440	708	25.42	SVY	-52,4	1,954	4.94	
1202	9,90	llan m	960	7.07	25,82	5.4	-51.4	1,954	4,94	
1205	1004	160ml mm	1440	5.55	25.15	14.8	5631	3.402	0.41	
1208	1924	160ml mm	2400	5.53	25,73	10.8	530.1	3.400	0,38	
1211	1048	160m) my	2450	5.52	25.10	60.3		3.398		
1214	1051	160m/ ma	3360	5.52	25.68	54.5	251.8	3.39)	0 35	/
										/
							L			/
					oling Data					
Sampling	Method: Per	istaltic Pump-N	umber:		Othe	r:		Sampling	Time: 127	51
	Clear Grey [
	Mild Strong							Low Med	dium Hig	gh
	Parameters	Conta	ainer Descript	ion,	Prese	ervative		Filtere	ed y/n	
Voca		2	vial no	اسر	HCI			N		
DRO	o RO	2	ESO ~L		N			N		
Byoc	7	2	250~1		N			N		
meta	1. M.	1	250 mL		HNO	3		N		
0 1350	ad Meta	15	125 m	_	N			N		
Remarks	Nota	: el In	strument	n se	halia	greda	do Fint	sada la	- pont	alla
	(s) Signature:	Neh	0.0	ppm					1	
		İn	ASTM-I	06771-02: S	tabilization of I	Parameters:				



± 0.2 °C

3% of reading

Groundwater Monitoring Field Data Sheet

± 10% of the previous reading or

± 1.0 NTU whichever is greater

± 20 mV

Project Na	ame: Pu	ma Te	losim		Projec	t Number:	Egos.	1605B		
ocation:	ame: P-	alamos	C.R.		Date:	0	11/11/	()		
LOCATION	R Team: M~-(1082	Δ,	ME							
Arcadis P	M - (108)	FI JC:	asing Dia.:	3 11		Montho	r. 3-	200		
Well ID: _	/	Well c	asing Dia.:							
			WELL CASING	VOLUMES	(per foot of wa	ater column)				
1-1/4″=0.06	1-1/2"=0.09	9 2"=0.16	2-1	/2″=0.26	3"=0.37 Well Data	,	3-1/2"=0.5	4"=0.65		6"=1.47
Well Dept	th.	9		ft. TOO	Gallons	per foot:			0.16	gal
Depth to			6.62	ft. TOO			sing (Well V	olume):	13.50	gal
Depth to		NI	4.38	ft. TO		ell volume			40.50	gal
Water Co	lumn in Well:	- 4	4.38	ft.	Placeme	ent of Pum	p Intake:	/-	11	ft. TO
Well Pur	ging Method: 🔀	Peristaltic Pump	Well Purging		ion and Fiel				Other wh	Ai3
Time	Depth to Groundwater	Flow Rate (ml/min)	Cumulative Volume	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
	(ft)		(gal)				1			
1100	6.62	126c/min	Involat	A 244	2500	24.4	-52.5	1.94)	1.85	
1100	1.33	12/ mm	13.50	1.34		31,4			4.94	
1114	5.30	yentum	21	0.09	25,82	5.4	-52.4	1.954	4.94	1
1121	1.30	1/2 car/m	40	3,01	52,85	3. 1	32.9	1.01	1. 10	1
										1
				-					1	1
								1		1
		-		-					1	/
										1
	/				oling Data			3753145	_ N	
Sampling	g Method: Per	istaltic Pump-N	lumber:		Othe	r:		Sampling	Time:	36
Color:	Clear Grey	Light Grey	Light Brown	☐ Brow	n Other:					
Odor: [Mild Strong	g Specify:			Visua	al Turbidit	y: Clear [] Low [] Me	dium 🔲 H	igh
	Parameters		ainer Descript	ion		ervative		Filter	ed y/n	
vocs		2	wial Mo	~1	HCI			N		
D80/0	No.	2	500~		N			N		
Syou)	250 ~		N			N		
Metal	1	1	250-1		нио	12		N		
Dissol		· · · · · · · · · · · · · · · · · · ·	125 ~		N			N		
	0 0	PDM								
Remark	r(s) Signature:	M								
mpiei	1/3/ Signature	li V		1.4.7.1	Tax but s	antonia.				
			ASTM-I	06771-02: S	tabilization of I	Parameters:				
- 0	Temp Cor	nductivity Dis	solved Oxygen			Eh	or ORP	Turbidity		

± 10% of reading or ± 0.2 mg/L, whichever is greater



Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Temp

± 0.2 phu

± 0.2 °C

Groundwater Monitoring Field Data Sheet

Project Mr	ame: Phone	Ten	2/15/1		Proje	ct Number:	E002	-16051	3	
	N	_	R		Data	0.	13/13			
	Poro	7	/ /	THE STATE OF THE S	Date:		11/2/2			
	R Team:	1	il. M	. #			,			
Well ID:	MW-110A	Mell o	casing Dia.:	2		Weathe	r:	174		
			WELL CASIN	G VOLUMES	(per foot of v	vater column)				
1-1/4"=0.06	1-1/2″=0.0	9 2″=0.10	2-:	1/2″=0.26	3"=0.3 Well Data	7	3-1/2"=0.5	4″=0.65		5″=1.47
Well Dept	th:	10	5,20	ft. TOO	Gallons	per foot:			0.16	gal
Depth to \			1,42	ft. TOO			sing (Well Vo	lume):	1.24	gal
Depth to S			ND	ft. TO		vell volumes			3.15	gal
	lumn in Well:		1.18	ft.		ent of Pump			11.30	ft. TO
10 11 11 11										
Well Purg	ging Method:	Peristaltic Pump -				ld Paramet			Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1002	1.42	160ml/-m	inicial							
1005	5.40	(60m)/m	.440	6.60	25.91	35.5	-5.0	2,370	0.68	
200	2.40	160m1/m	960	6.69	26.07	66.3	-38.8	4.181	0.52	
1011	3.40	160 ml/m	1440	6.11	26.07	-19.0	-26.9	4.051	0.45	/
1014	1,40	160ml/m	1920	6.13	26,08	-90.2	-34,4	3.816	0.41	
1011	3,40	160ml/-m	2400	604	26.15	-102.9	-38,4	3.636	0.38	
1020	2,40	160ml/mm	0185	6.14	26,05	-129.8	-45,9	3.508	0.35	
1023	2,40	160ml / ~~	3360	6.82	26,00	-151.2	-45.7	3.406	0.33	
1026	2,40	Kon me	3840	684	26,15	-111.3	- 52.1	3.325	0.31	
1009	3.40	100-11-	4320	6.85	25,93	-186.3	- 54.7	3.205	0.29	
1032	1.40	160 ml/mm	4400	6.88111	ling Data		3 7.1	3.237	65.0	110
	Method: Per		3.0 - 2.3 (3.0)	383	Othe			Sampling	Time: _10	71
Color:	Clear Grey [Light Grey	Light Brown	Brown	n Other	:				
Odor: 🖵	Mild Strong	Specify:			Visu	al Turbidity	: Clear	Low Me	dium 🔲 Hig	h
Sample P	Parameters		ainer Descript	ion	Pres	ervative		Filter	ed y/n	
voca	5	2	vial 40-	~1	HCI			N		
DRO /	082	2	500 ml		N			N		
Svac	4	2	250 ~1		L			N		
metal			250 21		HNO	3		N		
Dissolu		1	125 ml		N			N		
Remarks	0 0	ppm	1							
	(s) Signature:	W/								
Comomitant		1 10/ 1/								

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or ± 1.0 NTU whichever is greater



Project N		0	Taga	1	Drains	t Number:	-000.1	505B		
TOJECTIE	ame: PR Team:A	run	1erm no	×1						
ocation:	000	non	P.6		Date:	017	12/19			
Arcadis P	R Team:	IC M	F				1			
Well ID:	MW - 37/	Well	asing Dia.:	2"		Weather	:	γ		
1-1/4″=0.06	5 1-1/2"=0.0	9 2″=0.16		1/2″=0.26	(per foot of w 3"=0.37 Well Data		3-1/2″=0.5	4″=0.65		6″=1.47
Well Dep	th·		11.20	ft. TOC	Gallons	per foot:			0.14	gal
Depth to				ft. TOC			sing (Well Vo	lume):	3.28	gal
Depth to		-	0.65 ND	ft. TOC		ell volumes			9.86	gal
	olumn in Well:		20.55	ft.	Placeme	ent of Pump	Intake:	0-	1).00	ft. TC
Well Pur	ging Method: 🗹	Peristaltic Pump -	Well Purging						Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
403	6.65	160ml/mm	Intola							
1406	4.39	160m mm	440	6,16	28,20	50.8		0.695	0.65	
409	8.65	nom Im	960	6.19	28.19	-63.5	-25.5	0.696	0.55	/
1412	9.10	ibonlin		6.00	28,03	-15.0	-43.0	0.696	O.Mb	
1415	9.55	160ml /mm	1920	6.97	28,00	-81.2	-30.3	0.69)	0.44	/
1418	9,95	Kom / Imm	2400		28,01	-93.2	-40,1	0.698	CF.C	
1421	10.26	160 ml mm			28.12	-91.5	-32.3		14	
										1
	/				ing Data					
Sampling	Method: Per	istaltic Pump-N	lumber: 12	353	Othe	:		Sampling	Time: 15	38
Color: [→Clear Grey [Light Grey	Light Brown	☐ Brown	Other:		, .			
Odor: [Mild Strong	Specify:			Visua	al Turbidity	: Clear	Low Me	dium 🔲 Hi	gh
Sample ~RO	Parameters	2	1	40 m	Prese H CI	ervative			ed y/n	
voc	Š		vial v	10~1	HCI	_		N		_
DRO /	010	2	500 ml		N			N		
3 vo	3	2	250 WL		N			N		
meta	15 I mercu	M pw	1 250 ml		HNO	3		N		
01350	olved meta		1 125 MI		N			N		
Remark	s: 134 PPM									
Sample	(s) Signature:	and								
		Liv	ASTM-D	06771-02: Sta	bilization of P	arameters:				
			,,,,,,,,							

± 10% of reading or ± 0.2 mg/L, whichever is greater

± 0.2 phu

± 0.2 °C

3% of reading

± 20 mV

± 10% of the previous r

± 1.0 NTU whichever is g



± 0.2 phu

± 0.2 °C

3% of reading

Groundwater Monitoring Field Data Sheet

± 10% of the previous reading or

± 1.0 NTU whichever is greater

± 20 mV

						- Oi	ounawatt	er Wichitton	ing ricia i	Data Silet
Project Na	ame: Pr	nmy Ten	(por lun		Projec	t Number:	E002	1605B		
Location:	Byon	P.P			Date:	01/	12/1)			
Arcadis P	R Team:	A.C. M	=							
Well ID: _	MW - 13B	<u> </u> Well o	casing Dia.:	2"		Weathe	r:	ny		
						ater column)				
1-1/4"=0.06	1-1/2″=0.0	09 2"=0.10	2-:	1/2″=0.26	3″=0.37 Well Data	7	3-1/2"=0.5	4″=0.65		6"=1.47
Well Dept	th:	S	3.10	ft. TOC	Gallons	per foot:			9.16	gal
Depth to	Water:		.84	ft. TOC			sing (Well Vo	olume):	6.44	gal
Depth to			0.26	ft. TOC	A STATE OF THE STA	ell volume			19.32	gal
Water Co	lumn in Well:	-	0.05	ft.	Placeme	ent of Pump	o Intake:		31	ft. TOC
Well Pur	ging Method:	Peristaltic Pump -	Well Purging				ers		Other	
	Depth to		Cumulative	T				Cond.	D.O.	D.O.
Time	Groundwater (ft)	Flow Rate (ml/min)	Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	(mS/cm)	(mg/L)	(%)
1304	1284	160ml/mm	micial	-						
130)	12.82	160m/men	CYP	1.42	28.45	-28.7	-40.0	0.645	0.06	
1310	12,80	ibaml/ma	960	1.43	28.43	-41.4	-39.9	0.635	0.65	/
1313	12.82	160m Jus	1440	1	28.45		-43.3	0.628	0.53	
1316	12.82	(pour) u	1920		28.45	-41.1	-31.9	0.635	0,50	
1319	12.82	[Pow] [m	2400		24,48	-52.8	- 39.8			
1322	12.42	160m1/m	2860	200	24.31	-65.6	- 35.2			/
1325		160ml Jun	3360		24.26	-68.5	-33.5	1	1.2	/
1328	12,42	160m1 pm	08-10	17.401	24.13	00.2	33.7	10,643	19731	
		/			ing Data			Az. 0. 1/2 to		
Sampling	Method: Per	ristaltic Pump-N	umber: 12	383	Othe	r:		Sampling	Time: 15	46
Color:	Clear Grey	Light Grey	Light Brown	Brown	Other:		/			
Odor:	Mild Strong	g Specify:			Visua	al Turbidity	: Clear	Low Me	dium 🔲 Hig	gh
Sample F	Parameters		ainer Descript		Prese	ervative		Filtere	ed y/n	
VOL		2		on	HCI			N		
DRO /	10RD	2	500 m	2	N			N		
Svo	3	2	250 w	L	~			N		
netal	5 / moren	1	250 ~	n	HNO	3		N		
	ten boulo	ω\	125 1	~	N			N		
Remarks	:	40.0 PG	m		***					
Sampler	(s) Signature:	M								
		()	ASTIM-D	6771-02: Stal	bilization of P	arameters:				
pH	Temp Cor	nductivity Disso	olved Oxygen			Eho	r ORP Tu	urbidity		-
-		The second secon	10-				-			

± 10% of reading or ± 0.2 mg/L, whichever is greater



± 0.2 °C

3% of reading

Groundwater Monitoring Field Data Sheet

Project Na	ame: P	Ten	001001		Proie	ct Number:	E002	.1605R		-
Location:	ame: Pun	200	PB		Date:		1a/15			
202011		1	MF		Date.		1007			
	R Team:	AICI		- 1/			e .	(- Z		
Well ID: _	MW-BA	Well o	asing Dia.:				351	my		
			WELL CASIN	G VOLUME	S (per foot of w	vater column)				
1-1/4"=0.06	1-1/2"=0.0	9 2″=0.16	2-:	1/2″=0.26	3"=0.3 Well Data	7	3-1/2"=0.5	4″=0.65		6"=1.47
Well Dept	th:	18.	25	ft. TO	Gallons	per foot:			0.16	gal
Depth to			93	ft. TO		•	sing (Well Vo	lume):	1.81	gal
Depth to			/D	ft. TO	and the second second	vell volumes			5.43	gal
Water Co	lumn in Well:		.32	ft.	Placem	ent of Pump	intake:		12,50	ft. TO
Well Purg	ging Method:	122 1164	Well Purging		Monsoc	on Pump - Num	nber		Other	
Time	Groundwater (ft)	Flow Rate (ml/min)	Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1212	6.93	160ml/mm	Inicial	-						
1215	1.08	160ml/m	480	6.25	21.15	31.1	-31.5	3.184	2,46	/
1218	3-13	169-1/2	960	6.26	21-63	5.2	-21.0	3.20	2.00	
1221	2-24	160ml/min	1440	6.21	21,58	-4.4	-10.0	3.353	1.64	
1224	1.32	160ml/min	1920	6.24	21.51	-10-6	13.3	3.240		
122)	1.40	160m Vym	2400	6.67	21.45	16.4	3.56	3,258		
1230	2.43	1600m/mm	2880	6.29	27.41	-19.8	3,06	3,259	1.03	1
1233	2.54	1600/	3360	6.30	21.38	-23.3	SS OC	3.260	0.90	/
1236	7.62	160ml mm	3840	6.30	21.35	-25.6	55,06	3.157	08.0	/
1239	0.10	Local Law	4325	Sami	21.35 oling Data	- 20.1	55.07	3.258	- 6	
Sampling	Method: Per	istaltic Pump-N	umber: 12	38/3	Othe	r:		Sampling	Time: 12	45
	elear Grey [:	1			
	Mild □Strong						: Clear	Low Me	dium 🔲 Hig	gh
	Parameters		ainer Descript			ervative			ed y/n	
₩80	arameters		VINI 40~		HCI			THECK	-u _{1/11}	
Vocs	1	2 \	rial 40 m	1	HCI			N		
DRO /	080	2	500 ml		N			N		
5000	1	2	250~1		N			N		
Moron		-	250 ~1		HNO	3		N		
Dissol		1	125 ML		1			N		
Remarks	0	pn								
	(s) Signature:	M								
			ASTM-D	06771-02: St	tabilization of I	Parameters:				
_		di estados Dis-		X (200)			r OPP T	rhidity		

± 10% of reading or ± 0.2 mg/L, whichever is greater

± 20 mV

± 10% of the previous reading or



Conductivity

3% of reading

Temp

± 0.2 °C

± 0.2 phu

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

roject Na	me: Ohn	on Term	m		Projec	Number:	E002	.1605B		
	9				Date:	01/	12/11			
	R Team:		MF							
Arcauis Pr	Nw-16A	Walle	scing Dia :	1.		Weather	· Sun	2/010	nd	
Vell ID: _!	NW - 164	well co			(per foot of w					
-1/4"=0.06	1-1/2"=0.0	9 (2"=0.16	2-1,		3″=0.37		3-1/2"=0.5	4″=0.65		6"=1.47
					Well Data					
Well Dept	h·	58.	60	ft. TOC	Gallons	per foot:			0.16	gal
Depth to V		8,		ft. TOC	Gallons		sing (Well Vo	lume):	8.02	gal
Depth to S		ND		ft. TOC		ell volumes		-	24.06	gal
Water Col	umn in Well:	50	.15	ft.	Placeme	ent of Pump	Intake:	-	30	ft. TO
			Well Purging	Informati	on and Fiel	d Paramet	ers			
	ing Method:	/						П	Other	
Well Purg	Depth to	Peristaltic Pump - I	Cumulative		7735 - 7				D.O.	D.O.
Time	Groundwater	Flow Rate	Volume	рН	Temp.	ORP	Turbidity (NTU)	Cond. (mS/cm)	(mg/L)	(%)
111110	(ft)	(ml/min)	(gal)		(°C)	mV	(1410)	(III3/CIII)	(1116/12)	(>0)
0951	8.45	Kend/mv-	Livia							/
0954	8.41	(40 m/ma)	440	6.19	26.3)	15.1	0.0	0.651	0.92	-
0951	8.47	160m1/m	960	6.70	26.41	-7'0	0.0	0.659	0.62	
000	8.47	160ml, mm	1440	6.58	26.96	9.6	0.0	0.661	0.52	
003	8.41	Home I men	1920	6.39	26.55	32.3	0.0	0.659	0.4)	-
1006	8:47	160ml/mys	2400	6.38	26.55	36.6	0.0	0.659	0.46	-
1009	8.47	160m /Ama	८४४०	6.34	26.60	41.7	0.0	0.659	0.43	-
012	8,49	16 and pura	3360	6.33	26.60	58.5	0.0	0.659		/
1015	8.47	160ml mm		6.32	26.60	15.7	0.0	0.659	0.38	(
1018	1		4320	Samp	ling Data					
Sampling	Method: Per	istaltic Pump-N	umber: 12	383	Othe	r:		Sampling	Time: 10	35_
	Jelear Grey									
Odor:	Mild Strong	g Specify:	1100		Visu	al Turbidity	: Clear	Low Me	dium 🔲 Hi	gh
Sample P	Parameters		ainer Descript			ervative		Filter	ed y/n	
600		2 "	rial your	1	ALI			N		
rocs		2	vial you	7)	HCI N					
080/	080	7 3	m 000		N			N		
Svoc	13		250 ml					N		
netal	5 / morang		250 ~		HNO	3		N		
Diss	died mets	15	152 m		N			N		
Remarks	0.0	btu								
Sampler	(s) Signature:	WW								
	77		ACTRA F	16771-02- 5+	abilization of I	Parameters:				
			AS I WI-L	10111-07: 26	aning arion of I	arailleters.				

± 10% of the previous reading r

± 1.0 NTU whichever is grez

± 20 mV



Drainet Mr	P.		Propinal		Dynio	at Numahan		202 160	~D	Page 1	
Project Name: Puna Terminal Location: Bayaman P.B.					Project Number: <u>5002-1605B</u> Date: <u>01/12/11</u>						
Location:	R Team:	5 mga	W.E		Date:	01	1121	(1)			
		Mic	1.1.1	_ 1,			-				
						Weather: Sany					
			WELL CASIN	IG VOLUMES (per foot of v	vater column)					
1-1/4"=0.06	1-1/2'	"=0.09	2″=0.16 2-		3″=0.3 Well Data	7	3-1/2"=0.5	4"=0.65		6"=1.47	
Well Dept	h:		13.40	ft. TOC		per foot:			0.16	gal	
Depth to Water:			5.73 ft.7			per well ca	sing (Well \				
Depth to SPH:						TOC Three well volumes (x3):					
Water Column in Well:		_	11.47	ft.	Placem	ent of Pump	Intake:		11.75	ft. TO	
		/	Well Purging								
Well Purg			Pump - Number 12	383	Monsoc	n Pump - Num	ber		Other	1	
Time	Depth to Groundwat (ft)	Flow F	Volume	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)	
0848	5.93	160m1/									
0851	6.00	160m1	mr 480	6.03	26,45	253, n	0,0	0.458	0.68		
0854	6.00	160m11	_	6.03 2	26.44	200.1	0.0	0-459	0.51		
0851	6.00	160ml	1		6.39	168,4	0,0	0.459	0.50		
0000	6.00	160ml			6.36	128.4	0-0	0.459	9.44		
0903	6.00	160ml			6.36	81.8	0.0	0.461	0.39	-	
2090	6.00	[60ml	~ 2480 ~n 3360		6.39	30.4	0.0	0.462	0.36	/	
0912	6.00	160ml	/		6.38	52.1	0.0	0.982	0.35	/	
0915	600	16001	(55P) pm			31.9	0.0	0.500	9.32		
0 714	6100		1 mi- 4800			24.7	00		0.33	Sec.	
Sampling Method: Peristaltic Pump-Number: 12383 Color: Clear Grey Light Grey Light Brown Brown								Sampling	Time:	191	
				Brown							
	Mild Str	ong Specify	1: 10000		_ Visua	al Turbidity:	∠ Clear ∟	Low Med		z h	
Sample Pa	arameters		Container Description			rvative		Filtered y/n			
Vocis			a vial you		HCI HCI			N			
DRO/o	RO		2 300 mc		N		N				
Svoc3 7			7 250 mi	250 mi				N			
Metals /Mercay			1. 250 m		HNO₃			N			
Dissolved Metals 1125 ml					M.			N			
Remarks:	0,0										
Sampler(s	S) Signature:	W						1.5			
0921	600) loom		6771-02: Stabi	.33 lization of P	IY.3 arameters:	0.0	0.524 0.	.31		
pH	Temp Conductivity Dissolve		Dissolved Oxygen	ved Oxygen			h or ORP Turbidity				
+02 nhu								1 CONTRACTOR OF THE PROPERTY O			



pH

± 0.2 phu

Temp

± 0.2 °C

Conductivity

3% of reading

Dissolved Oxygen

 \pm 10% of reading or \pm 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

Project N	ame:	a Term	(na)		Proje	ct Number:	EDDA	1605B		
						21	105/17			
	R Team: A.									
Well ID:	MW-48B	Well	casing Dia.:	411		Weathe	r: 5 un	24		
319111912	10.5					vater column)				
1-1/4"=0.06	1-1/2"=0.0	99 2″=0.10	5 2-	1/2″=0.26	3″=0.3 Well Data		3-1/2"=0.5	4"=0.65)	6″=1.47
Well Dep	th:	15	,90	ft. TO	Gallons	per foot:			0.65	gal
Depth to			.16	ft. TO			sing (Well Vo	lume):	6.59	gal
Depth to	SPH:	^	rD	ft. TO	C Three v	vell volumes	(x3):		19.77	gal
Water Co	lumn in Well:		.14	ft.	Placem	ent of Pump	Intake:	-	11	ft. TO
Well Pur	ging Method: 💟	Peristaltic Pump -	Well Purging						Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
Papa	5776	160ml/mm	inicial							
0912	6.26	160ml/mm	480	6.96	28.77	364.3	0.0	0.570	2.32	
0915	6.48	160ml/mm	960	10.0	2876	3%.6	0.0	0.511		
0916	6.13	160ml 1 mm		5.11	28.83	386.6	0.0	0.571	2.21	
2921	6.96	160m/m	1920	0.13	24.76	396.1	0.0	0.512	2.18	
			M							
			- 1					-		/-
		1			5.7 Sec. 5					1
	Method: Per			383				Sampling	Time: _ 0 9	42
Odor:	Mild Strong	Specify:	None		Visu	al Turbidity:	Clear	Low Med	dium Hig	h
	arameters	Conta	ainer Descript		Prese	ervative		Filtere	ed y/n	
VOL		2	vials u	371	HCI			N		
080/0	Ro	2	500 m		N			N		
Svoc	3	2	250~1		N			N		
Merc	my /neto	NB 1	250~1		HNO	3		N		
01330	lued metals	1	125 ml		r			N		
Remarks	0.0	ppm								
	s) Signature:	W								
Sampler	3/ 3ignature.	. 11 0								

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or



± 0.2 phu

± 0.2 °C

3% of reading

Groundwater Monitoring Field Data Sheet

Location:	ame: Puna Boyan	may P.R			Date:			05B		
	R Team:									
	MW - 109A	Well c	asing Dia.:	2'	ic.	Weather	: Sur	7		
					S (per foot of w					
1-1/4"=0.06	1-1/2″=0.0	9 2″=0.16		1/2″=0.26			3-1/2"=0.5	4″=0.65		6″=1
Well Dept	th:	15.	10	ft. TO	C Gallons	per foot:	-		0.16	
Depth to			50	ft. TO			sing (Well Vo	olume):	1.165	
Depth to		NI		ft. TO	C Three w	vell volumes	(x3):		3.50	
	lumn in Well:		30	ft.	Placem	ent of Pump	Intake:		13.50	
		/	Well Purging	Informa	tion and Fie	ld Paramete	ers			
Well Purg	ging Method:	Peristaltic Pump - I	Number 123	83	Monsoc	on Pump - Num	iber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	
1016	9,50	160m1/mm	inticial							
1019	10.230	160 ml /mm	480	6.96	30.03	452.1	0.0	0.514	4.79	
1022	10.48	160ml/m	960	6.88	27,80	436.2	0.0	0.513	4.43	
1025	1053-	Ibon / m	1440	654	30.08	492.1	0.0	0.513	4.28	
1028	1065	160ml/m	1920	6.81	30.01	504.0	0.0	0.570	3.91	
1031	10.0%	160ml/m	2400	6.74	2963	515.4		P. 568	3.82	
1034	10.90	Ibom /my	2480	6.15	29.10	523.3	0.0	0,563	3.52	
1		100	/		^					
		l l								1
		/		Sami	pling Data					
Compling	Method: Per	istaltis Ruma N	umber: 17 3	0.000		r.		Sampling	Time: 11	00
					-					
100000000000000000000000000000000000000	Clear Grey [☐ Brow			7/ -			
Odor:	☐Mild ☐Strong	g Specify:	NOVE		Visu	al Turbidity	Clear	Low Me	dium []Hi	gh
Sample F	arameters	Conta	ainer Descript	ion		ervative		Filter	ed y/n	
CRO			els 40 ml		HEL			**		
VOC3	?		ials won		HCI			N		-
000/6	6	2 5	00 m		N			N		_
S Metal	frency	2 2	50 mi		N			N		
motal:	s/herong'	12	50 mc		HNO	3		N		
Dissolu	ed Metals	1 12	5 min		N			N		
		M	/ Duo	005	- Du	olican				
Remarks		^								
Remarks	(s) Signature:	1 W								

± 10% of reading or ± 0.2 mg/L, whichever is greater

± 20 mV

± 10% of the previous reading or



± 0.2 phu

± 0.2 °C

3% of reading

Groundwater Monitoring Field Data Sheet

								er ivionitor		
Project N	ame:Pro	na Ten	ival		Projec	ct Number:	E002.	1605B		
Location		Boyaman	PR		Date:	01	104/16)		
Arcadis	PR Team:	A.C	/M.F							
	MW-MP		asing Dia.:	11/2		Weather	: 570	m		
					(per foot of w			/		
1-1/4"=0.0	6 1-1/2"=0.0	9 2″=0.10	5 2-	1/2″=0.26	3″=0.3 Well Data	7	3-1/2"=0.5	4″=0.65	6	5"=1.47
Well Dep	th.	- 11	.00	ft. TO	Gallons	per foot:			1/20	.09 gal
Depth to			25	ft. TO			sing (Well Vo	lume):	0.42	
Depth to			ND	ft. TO	C Three w	vell volumes	(x3):			601
Water Co	olumn in Well:	4	15	ft.	Placem	ent of Pump	Intake:		8.50	ft. TO
			Well Purging	Informat	tion and Fie	ld Paramete	ers			
Well Pur	ging Method:	Peristaltic Pump -	Number 125	183	Monsoc	on Pump - Num	ber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1039	6.25	160 m/m	invaial							-/
1042	8.60	160m/m	430	6.86	21.11	380.4	0.0	1.513	0-26	
1095	9.51	160ml/ma	960	6.80	28:08	402.4	0.0	1,512	1.25	
1048	10.29	Ibon -	1440	6.18	21.16	412.6	0.0	1.51)	0.84	
1051	10.32	160ml mes	1920	6.76	21.88	421.5	0.0 %	1516	1.00	
1101	10.68									
1122	10.40		in	ell	287					
1131	10,20		V.							/
_										/
	g Method: Per			483				Sampling	Time:	14
	Clear Grey [Nove	I BIOW			- Clear -	Low Me	dium 🗀 Hia	ıb.
	☐Mild ☐Strong		3 2 2 2 2 2 2				Clear			
Sample	Parameters		ainer Descript	ion	HOI	ervative		riiter	ed y/n	
vo	1	2	vial		HCI			N		
DRO	1080	2	500ml		N			N		
30		2	250 ~1		N			N		
met	. /		250 mL		HNO	2		N		
	olved meta	1	125 ML		~	3		N		
		110				redir	10 1	Citoroo	200 /06	0
Remark Sample	s: 0,0 Pp^ (s) Signature:	M	01/05/17	DTM	V		100	Oct. 30	on bos	<u>. </u>
		30	ASTM-)6771-02: St	abilization of I	Parameters:				
pH	Temp Con	ductivity Diss	olved Oxygen			Eho	r ORP TL	rbidity		

± 10% of reading or ± 0.2 mg/L, whichever is greater

± 20 mV

± 10% of the previous reading or



Project N	ame:			1	Proje	ct Number:	_E002	1605B		
	Bayon	Λ .				0	1/04/	1/2		
Arcadis F	PR Team:									
Well ID:	MW-MI	9 Well	casing Dia.:	11/2		Weathe	r: 5 m	~		
						water column)				
1-1/4"=0.06	5 1-1/2"=0.0	2″=0.1	6 2-	1/2″=0.26	3″=0.3 Well Data		3-1/2″=0.5	4″=0.65		6"=1.47
Well Dep	th:		.10	ft. TO	Gallons	per foot:			0.09	gal
Depth to			.8)	ft. TOO			sing (Well Vo	olume):	0.92	gal
Depth to			0.23	ft. TO		vell volumes			2.16	gal
water co	lumn in Well:		1140	ft.	Placem	ent of Pump	Intake:		٩.	ft. TO
14.6	ging Method: Depth to	Peristaltic Pump -	Cumulative	183			ber	Cond.	Other	D.O.
Time	Groundwater (ft)	(ml/min)	Volume (gal)	рН	(°C)	mV	(NTU)	(mS/cm)	(mg/L)	(%)
1346	3.87	160ml/mm	Inicial					0		
1349	6.02	160ml/min	440	5.14	28.90	317.9	0.0	0-838	0.65	
1352	6.08	160ml/mas	960	5.68	28.81	406.8	0.0	0.899	0,53	/
1355	6.10	160m1/mn	1440	5.54	28.69	443.3	0.0	1.291	0.48	
1354	6.06	160m1/m	1920	5.41	28.78	4137	0.0	1.629	0.46	
1001	6,94	100ml um		SMS	28.94	490.1	0.0	1.788	0.44	
1404	6.94	Cont ma	2480	1	28.98	Son.1	0.0	1.888	9 45	-
1900	6,99	bon ma		5.44	28.94	513.8	0.0	1,903	0.45	/
1410	6.74	I would	3840	5.42	L8,84	524.2	0.0	1.930	0.47	/
	Method: Peri			883				Sampling	Time: 143	دح
Odor:	Mild Strong	Specify:			Visua	al Turbidity:	☐ Clear ☐	Low Med	dium Hig	gh
roc	arameters			and	Prese HU	ervative		Filtere	ed y/n	
689	-	, ,	- VINIS 4	000	HCI			N		
bro lo	RO	2	. 500 m		N			N		
Svoc	15		, 250 mi		N			N		
More	my / metal	15	250 m	L	HNO			N		
1.50	lued metal		125 m	U	N			N		
P15501										
Remarks:	0.04	200	FB-	-01041	7 - 14	30				

ASTM-D6771-02: Stabilization of Parameters

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the pre



± 0.2 °C

+ 0.2 phu

3% of reading

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

Project N	ame: P	na Tern	lonin		Proje	ct Number:	E001	, 1605B		
Location:	Boyo	man p	R.		Date:	01	104	11)		
Arcadis F	PR Team:	A.L.	MF							
Well ID:	MW-MP	₩ell	casing Dia.:	2"		Weathe	r: 3	227		
						water column)				
1-1/4″=0.0	5 1-1/2"=0.0	09 2"=0.1	5 2-1	1/2″=0.26 \	3″=0.3 Well Data		3-1/2"=0.5	4″=0.65		6″=1.47
Well Dep	th:		16.10	ft. TOC	Gallons	per foot:			0.16	gal
Depth to			6.31	ft. TOC		s per well ca		olume):	3.15	
Depth to		_	ND	ft. TOC		well volume			9.45	gal ft. TOO
Water Co	olumn in Well:	-	19.73	ft.	Placem	ent of Pum	o intake:		16	11.100
		1	Well Purging	Informatio	on and Fie	eld Paramet	ers			
Well Pur	ging Method:	Peristaltic Pump -	Number 12	442	Monso	on Pump - Nun	nber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
300	6.32	160ml/mm	moral	7		1		A12		
310	8,00	1000/1000	460		1.58	402,1		0.712	5.94	-
1313	8.85	160~1/~	960		9.38	429.1	0.0	0.113	2.18	-
1316	9.47	160 ml/m	1440	6.92 2	0.217	445.1		0.112	5.07	-
1319		160mi	1920	6.12	21.20	4.49.1	0.0	0.712	504	-
	1									1
Color:	g Method: Per Clear Grey Mild Stron	Light Grey	Light Brown	183	Other	r:	-			
	Parameters		ainer Descript	ion		ervative			ed y/n	
6-80		2	vial 40 ~		HC	1				
-VOC		2	vial vo-	mL	HCI			N		
DBO	ORO	2	500 m		~			N		
SVO	(3		250 mc		N			N		
Meta	15 Inerun	1	150 m		HNC) ₃		N		
Diss	olved met	13 1	125 m		N	-		N		
Remark	s: 0,0	66~								
	r(s) Signature:	Man								
		1, -	ASTM-D	06771-02: Stat	oilization of	Parameters:				
рН	Temp Co	nductivity Dis	solved Oxygen			Eho	or ORP	urbidity		7 -
	+0.3 °C 200		00/ of reading or	.0.2 ma/1	alchovor is a			10% of the prov	ious reading	-

± 20 mV

± 10% of the previous reading o



рН

± 0.2 phu

Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Temp

± 0.2 °C

Groundwater Monitoring Field Data Sheet

Arcadis PI		A, C, Well c		1 /2 "		_01/	04/11			
Arcadis PR Well ID: _/ I-1/4"=0.06 Well Dept	R Team:	A, C, Well c	M, F. asing Dia.: WELL CASIN	St. Land						
Well ID: _/	1-1/2"=0.0	Well o	WELL CASIN	St. Land						
1-1/4"=0.06 Well Dept	1-1/2"=0.0		WELL CASIN	St. Land		Weathe	r:	77		
Well Dept		9 2″=0.16			S (per foot of w					
	h:		2-:	1/2″=0.26	3″=0.3° Well Data		3-1/2"=0.5	4″=0.65		6″=1.47
		14.	10	ft. TO	Gallons	per foot:			0.09	gal
		3.6		ft. TO			sing (Well Vo	lume):	0.93	gal
Depth to S				ft. TO		ell volumes			2.81	gal
Nater Col	lumn in Well:		44	ft.	Placeme	ent of Pump	Intake:	- 6	9.	ft. TO
Well Purg	ing Method:	Peristaltic Pump - I	Well Purging				ers aber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1104	3.66	160ml/m	micial							
101	4.53	160ml /m	480	3.89	21.50	416.2	0,0	0.001	0.69	/
1110	4.14	100ml/m	960	6.05	21.45	318.1	0.0	0.735	0-61	
1115	5.11	160m/mm	1440	6.14	27.45	316.1	0.0	0.106	0.56	
1116	5.65	16m/m	1920	6-21	21.52	248.1	0.0	0.692	0.63	
1119	6.21	160m1/m	2400	6.26	21.65	148.1	0.0	0,689	0.12	
1122	6.11	160mlhin	2880	6.29	21.56	68.1	0.0	0.693	10.1.03	
1125	6.94	160ml/mm		6.30	21.68	9.5	0.0	0.688	6.95	1
1128	8.70	160m1/mi	-	6.34	21.69	3,1	0.0	0.619	508	I
1131	8.17	160ml Anny		Samp	21.17 oling Data	6.8	0.0	0.6%	2,28	*
Sampling	Method: Peri	staltic Pump-N	umber: 12	883	Other	r:		Sampling	Time:	16
	Clear Grey [n Other:					
	Mild Strong						Clear	Low Med	dium 🔲 Hig	gh
Sample Pa	arameters		iner Descript	ion	Prese	ervative		Filtere	ed y/n	
vocs		2 v	10 40 mi		HCI			N		
080/	ORO	2 5	ام ده		N			N		
Svoc	3	22	50 ml		N			N		
Metal	5 / mercuny	17	50 ml		HNO	3		N		
01350		1 12	5 m		N			N		
Remarks:										
		M								
-amplet(of orgunatures									

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or ± 1.0 NTU whichever is greater



Conductivity

3% of reading

Temp

± 0.2 °C

рН

± 0.2 phu

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

	ame:Pm				_ Projec	ct Number:	E 00	2.1605B		_
Location:	-		PA		_ Date:	DIFE	4/13			
Arcadis P	R Team:	Ad	MIE	2						
Well ID:	MW-MP-8	Well	asing Dia.:	1/2	As	Weather	:_ 5~	227		
					S (per foot of w					
1-1/4"=0.06	1-1/2"=0.0	2″=0.16	5 2-1	1/2″=0.26	3″=0.33 Well Data	7	3-1/2"=0.5	4″=0.65		6"=1
Well Dept	th.	9.1	9	ft. TO	C Gallons	per foot:			0-09	
Depth to		3.1		ft. TO			sing (Well Vo	olume):	0.45	
Depth to			ND .	ft. TC	C Three w	ell volumes	(x3):		1.44	
Water Co	lumn in Well:	5.3	3)	ft.	Placeme	ent of Pump	Intake:		6.5	
Well Purg	ging Method: 🗾	Peristaltic Pump -	Well Purging						Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	1
0948	3,73	(60ml/m						030	2) (*	
LATOGI		1600m1/m	440	2.24		400.1	0.0	0.727	0.85	-
1005 AI		100ml from		1.20	21.50	4124	010	0.728	0.01	-
1000 A	4.59	(60m/mm	1440	1.29	21.119	422,4		0.729	0.64	1
HOTON	4.90	160ml mm	1920	1.18	21.55	43.5		0-227	0.63	_
HOTZAL	5.48	Monline		0.10	21.10	443,5		0.721	0.63	
10th AL	5.29	(Bont mi	2880	1,17	2119	441.8	0.0	0.123	0.63	1/
	/			Sam	pling Data					
Sampling	Method: Per	istaltic Pump-N	lumber: 129	183	Othe	r:		Sampling	Time: 102	15
	Clear Grey									
	☐Mild ☐Strong		None				Clear	Low Me	dium 🗆 Hi	gh
	Parameters	The state of the s	ainer Descript	ion		ervative			ed y/n	
VOL		2	val 4	0 ~	HCI			N		
DRO	1080	2	\$500ml	4	N			N		
5000	<u>('5</u>	2	250mL		1			N		
	my / met o	NS X1	150 M		нио	3		N		
merc	-		125 ML	_	N			N		
merc	islued Met	05								
merc		ppm								

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous re-

± 1.0 NTU whichever i



Project Na	ame:	no T	crowson		Projec	ct Number:	F002	160513	-	
	Boys	P	3		Date:	01	194/11			
	R Team:				Dute.					
Arcadis P	Mw - Dp I	, , , , ,		1 K		Mastha	. 4 00	-		
Well ID: _	W/W - Db I	Well c								
			WELL CASIN	G VOLUMES	(per foot of w	rater column)				
1-1/4"=0.06	1-1/2"=0:0	9 2″=0.16	2-1	1/2″=0.26	3″=0.3 Well Data	7	3-1/2″=0.5	4″=0.65		6″=1.47
Well Dept	th:	9.0)	ft. TO	Gallons	per foot:			0.09	gal
Depth to		21		ft. TO			sing (Well Vo	lume):	0,62	gal
Depth to				ft. TO		vell volumes			5.50	gal
Water Co	lumn in Well:	- 6	.49	ft.	Placem	ent of Pump	Intake:		3.39	ft. TOC
Well Purg	ging Method:	Peristaltic Pump -	Well Purging						Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0907	2.11	(60m)/man	Micia			,				
0910	3.95	Many / m	U80	6.96	21.36	316.8	0.0	0.502	002	
0913	4.00	160m/m	960	2.04		261.5	00	0.530	0.05	-
0916	4.22	Iron / ma	1440	106	21.23	238.5	0.0	0.510	0.51	-
919	4.53	spoul I ma	C461	2.09	21.18	215,6	0.0	0.524	0.51	
092	4.71	1 Poem Jum	2400	1.01	21.19	205.2	0,0	0.524	0.50	-
0905	4.83	160ml mm	2883	1.01	21,22	200.4	0.0	0.527	0,50	-
										1
	L									1
					oling Data				0.0	-
Sampling	g Method: Per	istaltic Pump-N	umber: 12	883	Othe	er:		Sampling	Time: 19	36
Color:	Clear Grey	Light Grey	Light Brown	Brow	n Other	;	,			
	☐Mild ☐Strong						: Clear	Low Me	dium 🔲 Hi	gh
	Parameters	Cont	ainer Descript		Pres	ervative		Filter	ed y/n	
rocs		2 V	1015 40	~	HCI			N		
DRO/	080	2 3	moon		N			N		
3000	5	2 2	50 ml		N			N		
metal	15 Mercun		50 m		HNC)3		N		
D. 550	1 . 11		15 ml		N			N		
Remarks	0 0									
	(s) Signature:	A M								
- ampiei	(5) Signature	1								
			ASTM-I	06771-02: S	tabilization of	Parameters:				

pH Temp Conductivity Dissolved Oxygen Eh or ORP Turbidity ± 0.2 °C 3% of reading ± 10% of reading or ± 0.2 mg/L, whichever is greater ± 20 mV ± 10% of the previous reading or ± 1.0 NTU whichever is greater



Groundwater Monitoring Field Data Sheet Puma Terminal Project Name: Project Number: E002 ... 16059 Location: Date: MF Arcadis PR Team: Well ID: MN-ERIOS Well casing Dia.: Weather: WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: 0.16 ft. TOC Gallons per foot: gal 4.1 Depth to Water: ft. TOC Gallons per well casing (Well Volume): 2,35 gal Depth to SPH: ft. TOC 1.07 Three well volumes (x3): gal Water Column in Well: 12.13 Placement of Pump Intake: ft. TOC **Well Purging Information and Field Parameters** Well Purging Method: Peristaltic Pump - Number 12363 Monsoon Pump - Number Other Depth to Cumulative Flow Rate Temp. ORP Turbidity Cond. D.O. D.O. Time Groundwater Volume pH (ml/min) (°C) mV (NTU) (mS/cm) (mg/L)(%) (ft) (gal) 1534 4.11 Intural (600m) /mm 1531 4.83 home / ma 440 5.06 31.10 461,4 0.62 0.0 0.252 m / ma 1540 4.83 5.06 31,01 0.0 910 4821 0.250 0.51 160ml & mp 4.83 0,0 5.05 1543 1440 30.89 500.8 0.253 0-44 160m/m 1920 541 4.83 5.05 30,92 512.5 0-255 0.0 0.49 4,83 1547 160 ml/m 0,0 0.256 2400 5,05 30.94 518.0 0,33 Sampling Data Sampling Time: 160) Sampling Method: Peristaltic Pump-Number: 12343 Other: Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: MOR Visual Turbidity: Clear Low Medium High Sample Parameters **Container Description** Preservative Filtered y/n 2 vial 40m HCC WRO 2 vial 402 VOL HCI DEO / ORO 1 500 ml 22500 m N W 250 NU HNO₃ me tak 1 125 M N 0.0 ppm Remarks: Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters: рН Dissolved Oxygen Temp Conductivity Eh or ORP Turbia ± 0.2 phu ± 0.2 °C 3% of reading ± 10% of reading or ± 0.2 mg/L, whichever is greater ± 20 mV ± 10% o ± 1.0 NT



Project Na	ame: P_m	in Tern	lon!		Proje	ct Number:	EO	02-1605	B	
			P.B.		Date:	0	1/03/	1)		
		Aic, N								
Well ID: <u>^</u>	NW-EBIC	We We	ell casing Dia.:					-		
			WELL CASIN	G VOLUMES	(per foot of v	vater column)			
1-1/4"=0.06	1-1/2"=	:0.09	0.16	1/2″=0.26	3″=0.3 Well Data	7	3-1/2"=0.5	4"=0.65		6"=1.47
Well Dept	th		23.10	ft. TO	Gallons	per foot:			0.16	gal
Depth to			4.60	ft. TO			asing (Well Vo	olume):	2.96	gal
Depth to				ft. TO		vell volume			886	gal
Water Co	lumn in Well:		4.5	ft.	Placem	ent of Pum	p Intake:		_14	ft. T
		/	Well Purging	g Informat	tion and Fie	ld Paramet	ters			
Well Purg	ging Method:[Peristaltic Pum	p - Number 123	83	_ Monsoc	on Pump - Nur	mber		Other	
Time	Depth to Groundwate (ft)	Flow Rate (ml/min)	Volume	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O (%)
1445		160ml/m								
1448	4,78	160 ml m		9,43		456.5	-	0.693	15)	
1451	4.74	160ml h	~ 960	4.44	29.61	461.2	0.0	0.717	0.93	
1454	4.78	160m/~	v 1440	4.13	29,65	4141	0.0	0.125	OML	
(45)	4.28	160m/m		9.45	29.80	481-2		0.724	0,66	/
1599	4.74	160ml pm		4.99	16.85	482.2	-	9.231	0.62	1
1503	4.18	1600mlm	~ 2880	4.43	2912	4912	0.0	0.231	0.61	-
										+/-
				1 1	<u> </u>		1		1	1/
		/			ling Data					-11
Sampling	Method: P	eristaltic Pump	-Number: 12	383	Othe	r:		Sampling	Time:	511
			y Light Brown				/			
		ng Specify: _						Low Me	dium 🗀 Hi	gh
Sample P	arameters		ntainer Descript		Prese	ervative			ed y/n	
CAR				1000	HCI			N		
	1080		2	ML	N			N		
5 vo				m	N			N		
mer	cm he	tals	1 250	m	HNO	3		N		
D 1559	lucd me	tals	1 125	m	N			N		_
Remarks	0.0	bber								-
Sampler(s) Signature: _	lup								
			ASTM-D	6771-02: Sta	abilization of P	arameters:		ous reading		
pН	Temp C	onductivity D	issolved Oxygen			Ebo	or ORP Tu	ever is prest	er	
± 0.2 phu			10% of reading or ±	0.2 mg/L, w	hichever is gr					



± 1.0 N

Project Na	ame: ρ	nna Ter	lanin	-	Proie	ct Number:	- A	E002-10	.05B	
Location:		Rammo	P.P.			01		15		
Arcadic D	P Toom:	A	MI		Dute			-1		
			I casing Dia.:			Mastha	6.			
Well ID:	LIDI:	we.					r:5	7		
			WELL CASIF	AR AOTOME	S (per foot of v	water column)				
1-1/4"=0.06	1-1/2"=	0.09 2"=0	.16 2-	1/2″=0.26	3″=0.3		3-1/2"=0.5	4"=0.65		6"=1.47
					Well Data					
Well Dept	th:	2	7.11	ft. TO	Gallons	per foot:			0.10	gal
Depth to	Water:		1.40	ft. TO		per well ca		Volume):	2.29	gal
Depth to		-	ND	ft. TO		vell volume			6.48	gal ft. TC
water Co	lumn in Well:	-	14.31	ft.	Placem	ent of Pum	o intake:		15	11.10
			Well Purgin	g Informa	tion and Fie	ld Paramet	ers			
								_		
Well Purg		Peristaltic Pump	- Number 123		Monso	on Pump - Nun	nber		Other	
Time	Depth to Groundwate	Flow Rate	Cumulative Volume	рН	Temp.	ORP	Turbidity		D.O.	D.O.
	(ft)	(ml/min)	(gal)	,	(°C)	mV	(NTU)	(mS/cm)	(mg/L)	(%)
1350	3,80	160 ml/m) inicial					- 000		
1400	8.14	160m1/m		6.85	28.40	424.0	0.0	1.738	2.99	
1403	8.28	160m/m	1-3	6.84	28.26	439,1	0.0	1.945	2.47	-
1406	4.27	(word m		6.65	28.16	456.1	0,0	1.983	2.11	-
1409	8124	16001 Jan		6.61	28.11	456.7	0.0	\$000	2.06	
1412	8,13	160ml/m		6.56	28.21		0.0	0502	1.10	-
1418	8.13	160mg m		6.56	28.09	465.5	0.0	2028	1.60	1
1119	9715		3300		20.01	10111			1.00	/
		,		Samr	oling Data					
Compling	Mothod:	Paristaltic Dumn	-Number: 13		- 12 - 12 - 12 - 12 - 12 - 12 - 12 - 12			Campling	Time: 1/	120
								sampling	, Time. 10	194
			Light Brown	I BLOW						
		ng Specify:					Clear	□ Low □ Me		gh
Sample P	arameters	Cor	tainer Descript	ion	Presi	ervative		Filter	ed y/n	
voi	5			اسر	HCI			N		
DRO /	CRO	2	500 ml		N			N		
Svoc	1	2	250~1		1			N		
metal	4		150 m	V	HNO	3		N		
01330	atom bor	15 1	125 m	L	N			N		
		PM								
	s) Signature: _	6/2								
Junipie!	of signarate.	11/								
			ASTM-D	06771-02: St	abilization of F	Parameters:				
рН	Temp C	onductivity Di	ssolved Oxygen			Eh o	ORP	Turbio'		
± 0.2 phu			10% of reading or :	± 0.2 mg/L, v	whichever is gr			± 10%		



				-		-	S 3 MA 1 AP - 41	- 00	Line	
Project Na	ame:P	no Terr	(unin		Proje	ct Number:		/ E00	2, 1695	B
Location:	B	ajama,	0.8		Date:	pl	103	(1)		
Arcadis P	R Team: A	.C. M.F				11				
	NW-EB10		casing Dia.:	21		Weathe	r: 5 ~	my		
	EBIO					vater column)		1		
1-1/4"=0.06	1-1/2":	=0.09 2"=0.1	6 2-1	/2″=0.26	3"=0.3 Well Data		3-1/2″=0.5	4″=0.65		6"=1.47
Well Dept	th:	27	01,4	ft. TOC	Gallons	per foot:				gal
Depth to	Water:). 12	ft. TOC		per well ca		olume):	2.30	gal
Depth to	SPH: lumn in Well:	-	1D	ft. TOO ft.		vell volumes ent of Pump			6.90	gal ft. TOC
water Co	iumn in weii:		(30	_ 11.	Flacein	ent of rump	mtake.			
			Well Purging						lou	
Well Purg		Peristaltic Pump -		0.0	Monso	on Pump - Num	nber		Other	
Time	Depth to Groundwat (ft)	I FIGW KATE	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1238	7.72	160m/men	Inicial	-				16.0	- (10)	-/
1241	9.00	160ml/mm	480	208	28.83	112.8	0.0	1.417	2.69	
1244	9.5)	100m/m	969	1.08	7848	104.4	0.0	0.410	226	-
1247	1005	1600/mm	1940	1,08	28.39	117.2		1.405	2.00	
1250	10.22	- Ironguns	(IL)	1.09	28.01	106.8	0.0	1.105	2.12	
										/
									L L	
		Peristaltic Pump-l	10.3		ling Data			Sampling	Timo: 12	us
		ey Light Grey						Sampling	, rinic.	
				Brown				S. D.		-1
		ong Specify:	none			7	: Clear	Low Me		gn
Sample F	Parameters	Con	vials 400	~1	Pres HCL HCl	ervative		Filter	ed y/n	
D80/0	90)	500 mL	-	~			N		
		2	a Court		N					
metal	1	7 1	250 m		HNO)3	-	N		
Dissalu	red motal	5	125 m		N	_		N		
Remarks	9 0.0	on se te	no el l	Dupo	1 200	, Mw -	EBIOT (m5) M	W-ERD	7
	s) Signature:	M						1	3-17	
	., .	11 0	ASTM-D	6771-02: Sta	bilization of F	Parameters:			_	
pH	Temp	Conductivity Diss	olved Oxygen			Fh o	ORP T	rbidity		
± 0.2 phu			0% of reading or ±	0.2 mg/L, w	hichever is gr			10% of the pr		

± 10% of the pro ± 1.0 NTU which



						G	roundwate	er Monitor	ing Field I	ata She
Project N	ame:	rma Ter	mine		Proje	ct Number:	E001	. 1605B		
ocation:	6	ma Ter	P.B		Date		103/10			
Arcadis P	PR Team:	AL	MIH							
	EB-104	1 Well	casing Dia.:	21	ı	Weathe	er: _ <u>ځ</u> ېمر			
· c.i ib	-10				S (per foot of v			9		
-1/4″=0.06	5 1-1/2"	=0.09		1/2″=0.26	3″=0.3 Well Data	7	3-1/2″=0.5	4″=0.65		6″=1.47
Vell Dep	th:			ft. TO	C Gallons	per foot:				gal
epth to				ft. TO	Carried Control		sing (Well Vo	olume):		
epth to				ft. TO		vell volume				
	olumn in Well:			ft.		ent of Pum				ft. TO
			Well Purging	g Informa	tion and Fie	ld Paramet	ers			
Vell Purging Method: Peristaltic Pump - Number Depth to Cumulative				Monso	on Pump - Nur	mber		Other		
Time	Depth to Groundwat (ft)	Flow Rate	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
113	12.28	1604/100		5.92	21.97	121.6	0.0	2.338	CPO	
(16	12.65	169ml/m	5280	5.90	24.05	113.9	0.0	2.340	0.88	
119	1300			5.84	28:03	110.6	0.0	2,352	0.85	
		Peristaltic Pump-I			oling Data Othern				Time:	74
dor:	Mild Str	ong Specify:			Visu	al Turbidity	: Clear	Low Me	dium 🗌 Hig	h
ample F	Parameters	Cont	ainer Descript	ion	Pres	ervative		Filter	ed y/n	
					HCI			N		_
								N		
								N		
					HNO	3		N		
								N		
lemarke										
						(2			
			ASTM-D	06771-02: 51	tabilization of I	Parameters:	and			
Н	Temp		solved Oxygen				r ORP Tu	rbidi		
± 0.2 phu	± 0.2 °C	3% of reading ± 1	0% of reading or	± 0.2 mg/L,	whichever is gr	reater ± 20	mV ±	10%		



Project Na	ame:	Puna T	ermin)			ct Number:	E002.	1605B		
Arcadis P	R Team:	C. M.F			3,517					
Well ID:	ER- 104	Well	asing Dia.:	211		Weather	: 5un	n.		
Well ID.	MW-EBIC	<u> </u>			(per foot of v					
1-1/4"=0.06				1/2″=0.26	3"=0.3 Well Data		3-1/2″=0.5	4″=0.65		6"=1.47
Well Dep	th:	2'	0.0	ft. TOO	Gallons	per foot:			0.10	gal
Depth to			.96	ft. TOO			sing (Well Vo	olume):	3 39	gal
Depth to			1D	ft. TO		ell volumes			9.66	gal
Water Co	lumn in Well:		.14	ft.	Placem	ent of Pump	intake:	19		ft. TO
			Well Purging							
Well Pur	ging Method:	Peristaltic Pump -	Number1	383	Monsoc	n Pump - Num	nber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1043	6.96	160 cml Iman	[nivia]							
1046	8.60	100mg /m		6.23	28,51	442.3	55.6	2,329	1,76	/
1049	9,00	160m/~m	960	6.15	28.09	490,2	135.6	2.39	4.3)	
1052	9.51	160ml/m	1440	6.15	27.89	434.6	1.26	2,318	1.25	
1055	10.08	160 ml m	1920	6.14	21.80	438.3	80-2	2.318	1.20	-
1958	10.53	160 ml	2400	6.08	21.61	400.1	109.1	2.318	1.10	-
1101	10.92	iboulino	2880		27.24	281.5	96.3	6.332	1.00	/
1104	11,53	1000 pm	330		27.82	215.3	811	2.331	0.85	ע
11 10	11.80	160ml m1	4320		21.88	136.8	10.9%	2.335	0.93	
,		- 12			21.9 (pling Data					
	Method: Per							Samp ¹		
Color:	Clear Grey [Light Grey	Light Brown	Brow	n Other	:		_		
Odor:	☐Mild ☐Strong	g Specify:	None		Visu	al Turbidity	: Clear			
	Parameters	Cont	ainer Descript	ion		ervative				
6-R			rial you	4	HCI					
DRO	1080	-	500 ~1		~					
Svoc	1.		50 ml		N					
Met	1, 1.	un 12	50 m		HNO	3				
D.350	lved metal		125 M		N					
Remarks	0.0 00	om								
	(s) Signature:	M			1					
			ASTM-I	06771-02: St	abilization of	Para				
рН			olved Oxygen							
± 0.2 phu	± 0.2 °C 3%	of reading ± 1	0% of reading or	± U.2 mg/L, 1	wnicnever is g	eater 1				



Groundwater Monitoring Field Data Sheet Terminal Project Name: Project Number: EDOX, 160513 Location: Arcadis PR Team: Well ID: MW - RO Well casing Dia.: _ Weather: WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 =0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: 15.50 ft. TOC Gallons per foot: 0,16 gal Depth to Water: ft. TOC Gallons per well casing (Well Volume): 2.12 220 gal Depth to SPH: ft. TOC Three well volumes (x3): gal Water Column in Well: ft. Placement of Pump Intake: ft. TOC Well Purging Information and Field Parameters Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number Other Cumulative Depth to Flow Rate ORP Turbidity Cond. D.O. D.O. Temp. Time Groundwater Volume pH (ml/min) (°C) mV (NTU) (mS/cm) (%) (mg/L) (ft) (gal) 1.20 160ml/ma 0854 Inicial 0.0 1163 -1024 0851 4.05 nom (med) 489 2.04 0.563 0-64 21.69 0000 -1219 0.6 4.56 16001/mm 960 0.567 0.51 2.12 0.0 0.582 0903 5X,60 (Day) ma 1440 14.0 7.16 2154 1329 0906 Lord ma 2.16 73.01 0,0 0.599 6,25 920 0.39 -136,0 C.0 P090 6.93 mon / ma CONE 27.35 -1332 2-15 0.620 0.31 6.994 -123.0 Home Imm 5.12 2480 2)-39 0.649 0912 0.0 0.54 3360 1.04 1023 0915 8.45 0.0 01.43 0.695 9 40 3840 60ml/m 8914 -120.5 010 0/91 1641 4320 -120.3 isomi/m 0.0 9.91 0.672 Sampling Data 0724 160ml 1m -113.0 0.660 10.84 0,0 Sampling Method: Peristaltic Pump-Number: 1345 Other: Color: Clear Grey Light Grey Light Brown Brown Other: NON Visual Turbidity: Clear Low Medium High Odor: Mild Strong -- Specify: Sample Parameters **Container Description** Preservative Filtered y/n 2 rials 40 m G-RO 144 1 rials 40 m VOC3 HCI DROLORO 1 500m W N SYOCS N 150 ml Metals Morcum 150 mL HNO₃ Pissolves. Metals 125 ml Remarks: 0.0 VOL Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV



pH

± 0.2 phu

Temp

± 0.2 °C

Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

	ame: Pur						E00:			
Location:	Boy	no b.	R.		Date:	0	1/93/	(1)		
	R Team:									
Well ID: _	WM-EDIO	Well o	casing Dia.:	211		Weathe	r: ゴーハ	my		
			WELL CASIN	IG VOLUMES	(per foot of v	vater column)		J		
1-1/4"=0.06	1-1/2″=0.0	09 2″=0.1	2-	1/2″=0.26	3"=0.3 Well Data		3-1/2″=0.5	4″=0.65		6"=1.47
Well Dept	th:	2).	10	ft. TOC	Gallons	per foot:			0.16	gal
Depth to			68	ft. TOC			sing (Well Vo	olume):	3.42	gal
Depth to	SPH: lumn in Well:		VD	ft. TOO		vell volume			10-2-8	gal
water co	idilii ili vveii.	-	1.42	ft.	Placem	ent of Pum	o intake:		13	ft. TOO
Woll Burg	ging Method:	Double to Burne	Well Purging						lou	
wellruig	Depth to	Peristantic Pump -	Cumulative		Monsoc	on Pump - Nun	nber		Other	
Time	Groundwater (ft)	Flow Rate (ml/min)	Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0152	5.68	160ml/men	intolal	5.91	26.21	2466				-
0955	6.19	bomile	440		18.71	246.6	0,0	1.804	1.48	
0958	6.28	160mlpm,	960		28.66	293.1	0.0	1.810	1.12	
1001	6.30	160m1/~~	1440	5,51	28.58	330.3	0,0	1.811	0.89	
1004	6.44	160mlpm	1920		28.61	361.4	0.0	1.810	0.19	
1907	6,52	modimed	2400		28.63	382.8	0.0	1.810	0.6)	-
(0(0)	6.58	160 mlha	3360	5.53	28.41	400.0	910	1.813	0.59	
1013	6,13	160 cm/ cm	3840	-	28.29	423.3	0.0	1.805	0.44	/
1016	6.79	(10 my min		5.50	28,60	424.6	000	180)	0.42	1
		/			ing Data				Δ.	
Sampling	Method: Per	istaltic Pump-N	umber: 12	343	Othe	r:		Sampling	Time:	13
Color:	Clear Grey [Light Grey	Light Brown	Brown	Other:		/			
Odor:	Mild Strong	Specify:	None		Visua	al Turbidity:	Clear	Low Med	dium 🔲 Hig	gh
VOL'S	arameters		ainer Descript		Prese	ervative		Filtere	ed y/n	
6 RO	i —	7 v	tals nom	.1	HCI			N		
DRO	080	2 5	too mt		N			N		
Svoi	4	2:	150 ml		N			N		
Moto	15 / mercin	7 1 2	150ml		HNO:	3		N		
D .550	dred meta	NS 11	25 MI		N			N		
Remarks:	0.0	ppm								
Sampler(s) Signature:	m								
		**								
			ASTM-D	6771-02: Stal	ilization of P	arameters:				

Eh or ORP

± 20 mV

Turbidi

± 10% of \ ± 1.0 NTU \



							Mar and Control	union in the first terms		the sales
Project N	lame:P_^	na Term	inal		Proje	ct Number:	E002.	1605B		
Location:	Bozano	n P.R.			Date	12/	29/14			
Arcadis F	PR Team:	A.C. ANI	=							
	MW-DPS		casing Dia.:	2"		Weathe	r: Jun			
_						water column)		1		
1-1/4"=0.06	6 1-1/2"=0.0	09 2″=0.1	1	1/2″=0.26	3″=0.3 Well Data	37	3-1/2″=0.5	4″=0.65		6"=1,47
Well Dep	th:		0.5	ft. TO	C Gallons	per foot:			0.16	gal
Depth to			.87	ft. TO			sing (Well Vo	olume):	2.82	gal
Depth to		N		ft. TO		well volumes			8,46	gal
Water Co	olumn in Well:		.63	ft.	Placem	ent of Pump	Intake:			ft. TOC
Well Pur	ging Method:	Peristaltic Pump -	Well Purging				ers		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1055	2.87	160ml/m	Inicia)							1
1058	3.56	160m11mm	480	6,64	28,49	132.5	0.0	0.262	3.58	1
11011	3.69	160m/m	960	6.49	28.36	186.1	0,0	0.259	5.51	
1104	3.05	160m/min	1940	6.40	28.38	238.9	0.0	0.259	5.846	
1100	3.84	160ml min	1920	6.05	28.31	216.4	0,0	0.256	4.08	
1110	3.90	(LON/m	2400	5.61	24.51	312.0	0.0	0.255	2.53	
1113	3.78	land Imas	2880	5.52	28.36	344,0	0.0	0.252	163	
116	3,15	160 milymen	3360	5,43		3623	0.0	0.925	1.19	1
1117	3.90	160m/min	4320	5.45	28.22	388.0	0.0	0.253	1,09	1/
1115	4.06 /	marmosi	4400	S48 Samp	ling Data	903.5	0.5	0. 254	0.84	
Sampling	Method: Peri	istaltic Pump-N	umber:	-883	Othe	r:		Sampling	Time: _/\	3)
Color:	Clear Grey [Light Grey	Light Brown	Brown	n Other:					
	Mild Strong						Clear	Low Med	dium 🔲 Hi	gh
Sample P	arameters	Conta	iner Descripti	ion	Prese Ho.	ervative		Filtere	ed y/n	
NOC.	3	2 ~	ials		HCI			N		
DRO/	080	25	m 000		N			N		
Svoc	15	22	50~1		N			N		
metal	5 / mercung	1.7	som!		HNO	3		N		
0:350			LS ML					N		
Remarks	0.0	PPM								
Sampler(s) Signature:	M								
		,	ASTM-D	6771-02: St:	abilization of P	arameters:				

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Project Na	ame: P. ~	n Terms	N		Projec	ct Number	:	002,160	50	
Location:	Bo	compy	P.R		Date:	12	129/1	6		
Arcadis P	R Team:	A.C.	W.F							
Well ID:	MW-M	PSA We	ll casing Dia.:	21.		Weath	er:	N N		
Well ID.					(per foot of w			7		
1-1/4"=0.06	1-1/2"	=0.09		1/2″=0.26	3"=0.3" Well Data		3-1/2″=0.5	4″=0.65		6″=1.47
Well Dept	th:		63.70	ft. TOC	Gallons	per foot:			0.16	gal
Depth to		- 1	4:81	ft. TOC			asing (Well	Volume):	9,41	gal
Depth to			ND	ft. TOO		vell volume			28.23	gal
Water Co	lumn in Well:	-	58.83	ft.	Placem	ent of Pum	ip Intake:		30	ft. TO
			Well Purging						54.7	
Well Purg		Peristaltic Pum	p - Number 12	887	Monsoo	on Pump - Nu	mber		Other	1
Time	Depth to Groundwat (ft)	er Flow Rate (ml/min)	(gal)	рН	Temp. (°C)	ORP mV	Turbidit (NTU)	y Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1019	4.87	ilon Im		40					0.03	
1022	4.85	160m/m		6.85	28.66	54.1	0.0	0.869	0.97	
1025	4,66	160~1~		6.86	14,56	-68.0			0.69	-
1024	11.46	160m/m		6.87	28.57	-11.1	0.0	0.868	0.61	
1031	4.86	1600/1	1920	6.88	28.41	-69.4	0.0	0.861	0.54	-
1034	4,86	160ml/m	- 1.10	6.84	28.51	-11.9	0,0	0.869	0.52	-
1031	4.46	160ml/m	2840	0-0-0	00,49	-11.9	0.0	- 3-1	0,91	
					1-14					
			o-Number: 1> y ☐ Light Brown	883				Sampling	Time: <u>\\</u>	48
Odor:	Mild Str	ong Specify: _	None		Visua	al Turbidity	y: Clear	Low Me	dium 🔲 Hiį	gh
0-RO	arameters	Co	ntainer Descript		HC	ervative			ed y/n	
NOC	000		****		HCI_			N		
DRO/	1.				1			N		
200		CAT THE	2 250 ~	1				N		
Net		orang.	1 1250 ~	l.	HNO	3		N		
	^	· O PPM	1 125 1	L		-		N		
Remarks	: (s) Signature:	Λ								
sampier((5) Signature:	164	ASTIM-D	06771-02: Sta	bilization of P	arameters:				
pH	Temp	Conductivity D	issolved Oxygen			Ehe	or ORP	Turbidity		
± 0.2 phu			± 10% of reading or ±	t 0.2 mg/L, w	hichever is gr		0 mV	± 10% of the prev		



Project Na	me: Pun	on Term	inal		Project	Number:	E002.	1605B		
Location: _		Bayons	n P.R.		Date:	12	129/16			
Arcadis PF	R Team:	' /	9.C. N	F						
Well ID:	86A	Well c	asing Dia.:	211		Weather	341	14		
1-1/4"=0.06	1-1/2″=0.09	2″=0.16		/2"=0.26	per foot of wa 3"=0.37 Well Data		3-1/2"=0.5	4″=0.65	6	5″=1.47
Well Dept	h·	20	10	ft. TOC	Gallons	per foot:			0.16	gal
Depth to \		4.		ft. TOC			sing (Well Vo	lume):	3.15	gal
Depth to S		N	D	ft. TOC	Three w	ell volumes	(x3):		9,45	gal
	umn in Well:	19	.)	ft.	Placeme	ent of Pump	Intake:		19.	ft. TC
Well Purg	ing Method:	Peristaltic Pump -							Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
092)	4.30	160ml/min	inicial				0.0	1 101	0.01	
0930	4,29	160m/mm	460		28.68	13.6	0.0	1,196	0.01	
0933	4.84	160m/m	967	6.12		-1,6	0.0	1.361	0.55	
0936	4.86	160ml/m	1440	6.16	28.63	-10.6	0.0	1.445	0 47	/
0939	4.86	HOMI/mi	1920	6.15	28.59	-12.4	0.0	1,480	0.43	
0942	4.86	160m//m	2400	6.14	28.51	-(3.)	0.0	1.493	0.41	
0945	4.86	160ml/man	2880		28.56	-128	0.0	1.510	9.35	/
		,			ling Data					
Sampling	Method: Per	istaltic Pump-N	lumber: 13	383	Othe	r:		Sampling	Time:	> 095°
	Clear Grey									
A	Mild Strong						: Clear	Low Me	dium 🔲 Hi	gh
ORC		Cont	7 1 1	0~	Prese	ervative		Filter	ed y/n	
NOT			9	10~	HCI			N		
DRO	1090		7 200 V		~			N		
5 vo			- 00	~ L	<u></u>	_		N		
Meta		, 1		m	HNO	3		N		
Dishal			125 1	ML	N	-		N		_
Remarks	s:0 , o	66w								
Sampler	(s) Signature:									
		110	ACTIA	D6771_03+ \$+	abilization of	Parameters:				

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



1-1/2"=0.09

ME

2"=0.16

Well Purging Method: Peristaltic Pump - Number 12343

Flow Rate

(ml/min)

160ml/ma

160ml /ma

160m11mp

bom Int

160 ml/m

60mil n

Well casing Dia.:

14

NI

Cumulative

Volume

(gal)

inicia

440

960

1440

1920

2400

2880

Mare

Container Description

2 VIB1 400

1 125

vial 400

ML

2-1/2"=0.26

ft. TOC

ft. TOC

ft. TOC

Temp.

(°C)

2831

ft.

pH

5.18

5.10

5.0×

5,06

9.05

Project Name: _

Arcadis PR Team: Well ID: EB - 102

Location:

1-1/4"=0.06

Well Depth:

Depth to Water:

Water Column in Well:

Depth to

Groundwater

(ft)

8.11

8.90

9.00

P1. P

9,23

9.33

Odor: Mild Strong -- Specify: _

0.0 ppm

Sample Parameters

1-RO 06

Remarks:

Sampler(s) Signature:

Depth to SPH:

Time

1430

1433

431.

439

447

1445

944

Groundwater Monitoring Field Data Sheet 1605B Project Number: Weather: WELL CASING VOLUMES (per foot of water column) 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data 0.10 Gallons per foot: gal 3.09 Gallons per well casing (Well Volume): gal 9.27 Three well volumes (x3): gal ft. TOC Placement of Pump Intake: **Well Purging Information and Field Parameters** Monsoon Pump - Number Other ORP Turbidity Cond. D.O. D.O. mV (NTU) (mS/cm) (mg/L) (%) 0.0 1-88 24.89 381.6 0.969 0.0 24.74 430.3 0.993 104 T847 459.1 0.0 DOL 1.56 0.0 1,23 464.1 1013 28.56 461.2 1,018 106 1,020 0.0 28.33 110 Sampling Data Sampling Method: Peristaltic Pump-Number: 123 43 Other: Sampling Time: Color: Clear Grey Light Grey Light Brown Brown Other: Visual Turbidity: Clear Low Medium L. Preservative Filtered . HOI HCI N N HNO₃

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV



± 0.2 °C

3% of reading

± 0.2 phu

Groundwater Monitoring Field Data Sheet Project Number: _ E 002 . 1605A Project Name: ____ Punn Terminal Roperon Location: Arcadis PR Team: Well ID: Well casing Dia .: _ Weather: Juna. WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: ft. TOC Gallons per foot: gal 2.48 Depth to Water: 341 ft. TOC Gallons per well casing (Well Volume): gal NID Depth to SPH: ft. TOC Three well volumes (x3): gal Water Column in Well: Placement of Pump Intake: ft. TOC **Well Purging Information and Field Parameters** Peristaltic Pump - Number 12383 Monsoon Pump - Number Other Depth to Cumulative Flow Rate ORP **Turbidity** Cond. D.O. Temp. D.O. Groundwater Time Volume pH (ml/min) (°C) mV (NTU) (mS/cm) (mg/L) (%) (ft) (gal) 3.42 1348 62m/man nicion Hom) /my 1351 3.41 440 28.64 0.16 0.485 3.93 960 1354 6.91 18,45 794.0 0.55 440 3.94 1357 1,180 28.46 20.2 O.40 701.1 0.507 4.00 1400 1920 6.83 29.3 2801 7116 0.508 0.31 4.02 2400 1403 (60 cm) 112.6 28.2 0.35 0.511 4.04 2880 1406 LOCA 29.4 0-511 **Sampling Data** Sampling Method: Peristaltic Pump-Number: 12343 Other: Sampling Time: 146 Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: Visual Turbidity: Clear Low Medium High Sample Parameters **Container Description** Preservative Filtered y/n 2 V/2 6-RO HC I vial 40 ml HCI 500 mL N 250 ml N N 1 250 ml HNO₃ 0.0 ppm Remarks: Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters: pH Temp Conductivity Dissolved Oxygen Eh or ORP

± 10% of reading or ± 0.2 mg/L, whichever is greater

± 20 mV

± 1.,



Groundwater Monitoring Field Data Sheet Project Name: lorims E002-1605A Project Number: ____ Location: MIF Arcadis PR Team: Well ID: WW - TP-2 Well casing Dia.: Weather: WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: ft. TOC Gallons per foot: gal Depth to Water: ft. TOC Gallons per well casing (Well Volume): gal Depth to SPH: ft. TOC Three well volumes (x3): gal 12.47 Water Column in Well: 1205 ft. Placement of Pump Intake: ft. TOC **Well Purging Information and Field Parameters** Well Purging Method: Peristaltic Pump - Number 1383 Monsoon Pump - Number _ Other Depth to Cumulative Flow Rate ORP Temp. Turbidity Cond. D.O. D.O. Time Groundwater Volume Hq (ml/min) (°C) mV (NTU) (mS/cm) (mg/L) (%) (ft) (gal) 6.53 302 160ml -m totatal 1305 1.68 0.0 6.23 28,75 131.9 1/DMI ma 420 1:405 0018 130% 2.65 Irm madel 960 6.64 24,73 2467 0.0 1.406 O De 1440 311 2,20 my for all 28.63 321.7 0,0 1.402 064 1314 2.83 28.50 1920 3621 1,404 60 0-5 0,56 8,05 (60m) 1317 2400 24-61 0.49 3843 0.0 10.68 1.401 1320 K.31 2440 28.67 403.9 1(-Don / ~ 00 1,402 0,45 1323 0,0 452 6-11 bomi 3360 2810 4221 0.43 1,395 Sampling Data Sampling Method: Peristaltic Pump-Number: 12363 Other: Sampling Time: 1333 Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: Visual Turbidity: Clear Low Medium High Sample Parameters **Container Description** Preservative Filtered y/n VOUS 2 viols you MCL 2 vials you GRO HCI N DRO ORA 2 500 ML SVOC'S 1 250 ml metal Mercung 1 650 mc HNO₃ Dissolved Motals 1 125 ML N Don Remarks: Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters: Temp Conductivity **Dissolved Oxygen** Eh or ORP Turbidity ± 0.2 phu ± 0.2 °C ± 10% of reading or ± 0.2 mg/L, whichever is greater 3% of reading ± 20 mV ± 10% of the previous read



Temp

± 0.2 °C

± 0.2 phu

Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Duningt N	ρ,	ma Ta						er Monitor		
roject N	ame: Pu	ind le	00		Projec			.16050		
	A				Date:	12,	128/16	0-		
	R Team: A	, C. M.								
Well ID: _	MN-BI	Well o	casing Dia.:	7.,		Weathe	r:5	nny		
			WELL CASIN	IG VOLUMES	(per foot of w	ater column)				
-1/4"=0.06	1-1/2"=0.0	9 2″=0.1	6 2-	1/2″=0.26	3″=0.37 Well Data	,	3-1/2″=0.5	4″=0.65		6"=1.47
Well Dept	th:		1.30	ft. TOC	Gallons	per foot:			0.16	gal
epth to			50	ft. TOC			sing (Well Vo	olume):	2,06	gal
epth to	SPH: lumn in Well:		VD	ft. TOC		ell volumes			6.1	gal
rater Co	iumn in weii:		7.8	ft.	Placeme	ent of Pump	Intake:		4	ft. TO
			Well Purging	Informati	on and Fiel	d Paramete	orc			
Vell Purg	ging Method:	Peristaltic Pump -					ber		Other	
	Depth to	Flow Rate	Cumulative	1						
Time	Groundwater (ft)	(ml/min)	Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
052	1.50	16001/mt	12:00	-		295.3				
55	3.18	160ml/m		6.83	28.01	A. 615	64.9	0.672	0.56	
58	5.05	160m1/mm	960		27.96	325.1	21.6	0.627	0.95	
01	5.64	160m/m	1440		26.01	341.1	-8.6	0.630		
04	6.85	160m1/m	1920		28.27		0.0	0.641	0.53	
10)	1.06	1001/m	2400	682	58.40 JK.27		0.0	0.695	0 -0	
10	7.11	160 mm	200	603	23. 10	331.1	0.0	0.648	.060	
		,								
	/			Sampli	ing Data					
mpling	Method: Peri	staltic Pump-N	umber: 12	383	Other	:		Sampling	Time: 1\3	1
The second	Clear Grey									-
	Mild Strong						Clear	Low Med	lium 🗀 Hia	h
	arameters		iner Descripti	ion		rvative				
NOC	2		vial 10~		HLI	varive		Filtere	и у/п	
O-BS		1	vial 40	~	HCI			N		
	ORD	2	500 mm		N			N		
Svoc	+	2	250 ml		N			N		
water	/mercuny	Ü	250 MI		HŊO₃			N		
	loton bed,	1-1	25 m)		N	1		N		
D 155			0	1.	1	(N.	0000		1	
D (55)	0.0	VOL		nolu	090	DO	0003-			

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or ± 1.0 NTU whichever is greater



Groundwater Monitoring Field Data Sheet ermina E002-1605 A Project Name: Project Number: Location: Arcadis PR Team: Well ID: WWTD - 1 Well casing Dia.: Jugar Weather: WELL CASING VOLUMES (per foot of water column) 2"=0.16 1-1/4"=0.06 1-1/2"=0.09 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: 6.46 ft. TOC Gallons per foot: gal Depth to Water: 5.42 1,76 ft. TOC Gallons per well casing (Well Volume): gal NIA 5.29 Depth to SPH: ft. TOC Three well volumes (x3): gal 04 Water Column in Well: Placement of Pump Intake: 1100 ft. TOC **Well Purging Information and Field Parameters** Well Purging Method: Peristaltic Pump - Number Monsoon Pump - Number Other Depth to Cumulative Flow Rate Temp. ORP **Turbidity** Cond. D.O. D.O. Groundwater Time Volume Hq (ml/min) (°C) (NTU) mV (mS/cm) (mg/L) (%) (ft) (gal) 0949 165,42 and Imor Dinicio 480 29.41 0952 160ml /MM 6.50 -100 0.603 0.55 5.15 2955 (Don) /ma 160 29.18 0.0 0.593 0.45 5.16 1447 0958 29,10 93. 0-0 41 1001 5.76 6.35 on /m 29.09 1920 941 -200 0.589 5.26 004 (5000) ma 2400 6-35 29.32 96A 28.0 0.570 0.35 5.77 2950 0.590 009 2480 -100.7 -30, Lond Inv 0.32 do 160 cm / 3360 29.60 -91 -27.1 0.50 0.31 Sampling Data Sampling Method: Peristaltic Pump-Number: 123 63 Other: Sampling Time: 10 19 Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: Visual Turbidity: Clear Low Medium High Sample Parameters **Container Description** Preservative Filtered y/n VOUS 2 VIals una G-RO vials uom HCI N DRO/DRO 2 500 ml N N 5VOC'S 250 ml N N metal mercus 250 ml HNO₃ N metals 125 ML Disslued N ppm 1512 Remarks: Sampler(s) Signature:

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Conductivity

3% of reading

Temp

± 0.2 °C

pH

± 0.2 phu

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet Project Name: Project Name: Project Number: E002.16057 Location: Boyaman P.R. M.F Arcadis PR Team: Well ID: MW - 16C Well casing Dia.: Weather: WELL CASING VOLUMES (per foot of water column) 2"=0.16 1-1/4"=0.06 1-1/2"=0.09 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: ft. TOC Gallons per foot: gal 6.15 Depth to Water: ft. TOC 8 22 Gallons per well casing (Well Volume): gal ND 26.18 Depth to SPH: ft. TOC Three well volumes (x3): gal Water Column in Well: 33 .5 ht. TOC ft. Placement of Pump Intake: Well Purging Information and Field Parameters Well Purging Method: Peristaltic Pump - Number 2883 Monsoon Pump - Number ___ Other Depth to Cumulative Flow Rate Temp. ORP Turbidity D.O. Cond. D.O. Groundwater Time Volume (ml/min) (°C) (NTU) mV (mS/cm) (mg/L) (%) (ft) (gal) 0904 6.25 12.0 in cho all Micial 3.451 78199 110:11 0,0 120 Hom / man 450 12.04 0900 28,93 146.4 0,0 3.851 1,51 160 ml/m 960 0.0 0910 134,5 7.12 12.05 28.97 3 932 1,47 6.95 3,957 0912 160m)/mm 1440 12.05 29.03 0.0 131.5 6.83 40m1/m 1920 24.0a 1204 133.9 0.0 3.971 0916 1.25 1400 Land Ima 140.4 0,0 0919 640 12.03 28.96 **Sampling Data** Sampling Method: Peristaltic Pump-Number: 1248 Other: Sampling Time: 92 Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High Sample Parameters **Container Description** Preservative Filtered y/n 2 min you HCI VOLS 4 rill now C-RO HCI N DRO/ORO 2 500 m N 250~1 SVOUS N Metal morong 25001 HNO₃ N Dissolves metals 1 125 m N bbu vol. Remarks: MM Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters:

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or ± 1.0 NTU whichever is greater



Sampler(s) Signature:

Groundwater Monitoring Field Data Sheet Termina 7 Project Name: ____ E002.1605A Project Number: ___ Location: Arcadis PR Team: Well ID: Well casing Dia.: __ Weather: WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: ft. TOC Gallons per foot: Depth to Water: .60 ft. TOC Gallons per well casing (Well Volume): gal Depth to SPH: ft. TOC Three well volumes (x3): gal Water Column in Well: Placement of Pump Intake: ft. TOC **Well Purging Information and Field Parameters** Well Purging Method: Peristaltic Pump - Number 12343 Monsoon Pump - Number Other Depth to Cumulative Flow Rate Temp. ORP Turbidity Cond. D.O. D.O. Time Groundwater Volume pH (ml/min) (°C) mV (NTU) (mS/cm) (mg/L) (%) (ft) (gal) Sampling Data Sampling Method: Peristaltic Pump-Number: 123 13 Other: ______ Sampling Time: ____ Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: ___ Visual Turbidity: Clear Low Medium High Sample Parameters **Container Description** Preservative Filtered y/n HCI N N HNO₃ N Remarks: 100 PPM VOL

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Project Na	ame: 0	ama T	Laminal		Projec	t Number:	EOP	2. 1605B		
			ann P.			12,				
	R Team:		MF		, Dutc.	100				
	MW-		Vell casing Dia.:	211		Weathe	r: 554	ny		
States Same					(per foot of w					
1-1/4"=0.06	5 1-1/2	″=0.09		1/2″=0.26	3″=0.37 Well Data		3-1/2″=0.5	4″=0.65		6"=1.47
Well Dept	th:		11.11	ft. TO	Gallons	per foot:			0.16	gal
Depth to		AL.	11.76.02	ft. TO		per well ca		Volume):	0.81	gal
Depth to	SPH: lumn in Well	. —	ND = .09	ft. TO		ell volumes ent of Pump			8.50	gal
water co	iuiiii iii weii	•	31	ft.	Placellie	ent of Pump	mtake.		0.20) ft. TC
			Well Purging	Informat	tion and Fiel	d Paramet	ers			
Well Purg			ımp - Number]	383	Monsoo	n Pump - Num	ber		Other	
Time	Depth to Groundwa (ft)	I Flow Ra	Volume	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1522	6.02	- 100mila	Initial am							
1525	7.60	160m1/n		6.98	78.89	428.	0.0	0,416	0.61	/
1524	1.44	160ml/		209	28.55	439.0	0.0	0416	0.49	
1127	8.04	160 ml p		2.13	28.43	71031		P.416	0.41	
16099				3.16	28.53 14.92	391.3	0.0	0.422	0.34	-/-
1537	8.40			2.16		341.7	0.0		0.36	-/-
1543	1-			0.16	28,88	340.5	0.0	0,435	0.41	//
I L	5111	TOO N	MA 3300	7.17	40:01	١٩٥٥	2.0	0,433	0.41	/
		1		Samp	ling Data					11
Sampling	Method:	Peristaltic Pur	np-Number:			r:		Sampling	Time: 1	553
			rey Light Brown				- /			
	_	rong Specify		low			: Clear [Nec	dium 🗆 His	gh
	arameters		Container Descript	ion		rvative		Filtere		
VOC	5		2 winds 40		HCI			N		
NO/C	80			mc	HCI			N		
SVOL	110		2 500 m		N			N		
4. 1. 14			1 250 ml					N		
Motor	> /Mercu	7	1		HNO:	3		N	×	_
D. 35 olv		O VOL	1 125 ml		N			N		
Remarks			*							
Jampier	(s) Signature:	· — MA	1						-	
	<u></u>		ASTM-D	06771-02: Sta	abilization of P	arameters:				
pH ± 0.2 phu	Temp ± 0.2 °C	Conductivity 3% of reading	Dissolved Oxygen ± 10% of reading or ±	10.2 mg/1	whichever is se-			Turbidity		
- or bun	20.2	Jo of reading	T TO O DI LEGGILIE OL Z	L U.Z HIB/L, V	vincinever is gre	TZU	IIIV	± 10% of the prev	ious reading (



± 0.2 phu

± 0.2 °C

3% of reading

			÷			G	roundwate	er Monitor	ing Field	Data She
Project N	ame:	A.(, A			Proje	ct Number:	EOC	2.1605	A	
Location:		Boyon	on P.R				2/27/1			
Arcadis P	R Team:	A.(. 1	n.F				,			
	MW-C	KA Wel	l casing Dia.:	2"		Weathe	r: Jan	9		
			WELL CASIN	NG VOLUME	S (per foot of v	water column)				
1-1/4"=0.06	1-1/2"	′=0.09		1/2″=0.26	3″=0.3 Well Data	7	3-1/2″=0.5	4″=0.65		6"=1.47
Well Dept	th:		10	ft. TO	C Gallons	per foot:			0.16	gal
Depth to	Water:	L	1.93	ft. TO	4. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		sing (Well Vo	lume):	1.93	gal
Depth to			VID	ft. TO		vell volume			5.09	gal
Water Co	lumn in Well:	16	1.01)	ft.	Placem	ent of Pump	o Intake:		11)	ft. TO
		,	Well Purging	g Informa	tion and Fie	ld Paramet	ers		440	
Well Purg	ging Method:	Peristaltic Pump	- Number 12	383	Monso	on Pump - Nun	nber		Other	
	Depth to	Flow Rate	Cumulative	()	Temp.	ORP	Turbidity			1 4 7
Time	Groundwat	er (ml/min)	Volume	pН	(°C)	mV	(NTU)	(mS/cm)	D.O. (mg/L)	D.O. (%)
11100	(ft)	-	(gal)	1.	, -,		(1010)	(ms/cm)	(1118/1-)	(70)
1433	4.93	160m1/m		4	200					-
1436	6.30	1604/1	0.0	4.29	28.91	430.1	0.0	0.699	2.94	-
1439	6.60	1600d/mi		4,30	28.86	442.0		0.669	2.55	
1447	6,80	160ml/m		4.31	28.85	450.3		0.60	2.25	-
1445	1.00	100 cm/ ma		4.34		459.3	0.0	0.610	1.94	-
1446	0.15	bonton	2880	4.36	28.88	458.9	0.0	0.669	1.60	-
1451	0.15	I have me		4.42	28.54	462.4	0.0	0,662		J
1454	2.15	I'm n	3840	4.54	24.64	453.4	0.0	0,660	1.80	
		1		Samp	ling Data				18.74	
Sampling	Methød:	eristaltic Pump-	Number: 12	383	Othe	r:		Sampling		
		ey Light Grey								
		ong Specify:					Clear	Low		
	arameters		tainer Descripti			rvative				
VO	63	a	VIOLS 400	W	HU	ivative				
_ GR	2	2	vials 401	1	HCI	-		_		
	10RO	2	son me		N					
- SVX	3	2	250 mc		N					
- Motal	5 / Merc	my !	250 m		HNO	1				
Disd	ved Met	ا داه	115 ML		N					
Remarks:	0.0									
Sampler(s) Signature:	M								
			ASTM-D	6771-02: Sta	bilization of P	arameters:				
nu nu	Toms	Candination	-1-10							
pH	Temp (Conductivity Dis	solved Oxygen	-		Eh o				

± 10% of reading or ± 0.2 mg/L, whichever is greater

± 20 mV



Conductivity

3% of reading

± 0.2 phu

± 0.2 °C

Dissolved Oxygen

 $\pm\,10\%$ of reading or $\pm\,0.2$ mg/L, whichever is greater

						G	roundwate	er Monitor	ing Field	Data Sh
Project N	ame: Puno	Jerman			_ Proje	ct Number:	E003	2.1650		
	Bo				Date:	12	120/16			
Arcadis F	PR Team:	A.C	M.F							
Well ID:	MW-99A	Well	casing Dia.:	7"		Weathe	r: 5~	224		
		_			ES (per foot of v)		
1-1/4"=0.06	5 1-1/2"=0.0	09 2″=0.1	2-	1/2″=0.26	3″=0.3 Well Data		3-1/2"=0.5	4″=0.65		6"=1.47
Well Dep	th:		10	ft. TO	C Gallons	per foot:			0.14	gal
Depth to		10.	13	ft. TO	A STATE OF THE PARTY OF THE PAR		sing (Well Vo	olume):	1,16	gal
Depth to		NP		ft. TC		vell volume:			3.48	gal
Water Co	olumn in Well:	7.2)	ft.	Placem	ent of Pump	Intake:		14	ft. TC
Well Pur	ging Method:	Peristaltic Pump -	Well Purging						Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1216	1043	160m/ mm	12,000							_
1219	1090	160H/mn	180	4.76	29.01	347,8	0.0	0.339	5.05	
1755	16.01	160ml/man	960	401	29.18	361.4	0.0	0.230	4.91	
1275	10.91	16001	1440	4.06	29.53	3%.3	0.0	0.230	4.96	
1728	10.99	169m/m/n	1920	474	28.85	396.1	0.0	0.931	420	
1231	11.30	160ml/mm	2400	4.61		401.9	0.0	0.226	4.60	
1234	11,38	160ml/mm	2880	4.54	24.83	411.2	0.0	0.226	4,49	
			-							/
										/
Sampling	Method: Peri	staltic Pump-N	umber: 13		oling Data	r:		Sampling	Time: 134	11
Color:	Clear Grey	Light Grey	Light Brown	Brow	n Other:		/			
Odor:	Mild Strong	Specify:^	rone		Visua	I Turbidity:	Clear	Low Med	lium 🗀 🖂	c
NOC	arameters	Conta 2	iner Descripti	8n_1		rvative		Filtere		
DRO/	0.80)	- Naly 4		HCI			N		
		2	500 mL		N			N		
3000	- 5	2	250~1		N			N	Ť	
Notal	4 / Meren	7 1	250 ML		HNO ₃			N		
1,050	lued Motal	5 1	115 ML		N			N		
Remarks:	0,0 V	or								
Sampler(s	s) Signature:	M								
	20 100 100 10 100 1	11.0	ASTM-D6	771-02: Sta	bilization of Pa	rameters:				
рН	Temp Condi	uctivity Dissol	ved Oxygen			Eh or (000 T			

Eh or ORP

± 20 mV

Turbid

± 10° ± 1.



Project Na	ame:	a Tern	n/na)		Projec	ct Number:	E002	1605B		
Location:	R Team:	amon !	2.R		Date:	12	127/16			
Arcadis P	R Team:	A.L. 1	NF							
Well ID: _	MW -88A	Well c	asing Dia.:	31,		Weathe	: 5hn	7		
				G VOLUMES (1		
1-1/4"=0.06	1-1/2″=0.0	9 2″=0.16	2-:	1/2″=0.26	3″=0.3 Well Data	7	3-1/2"=0.5	4″=0.65		6"=1.47
Well Dept	th:	17.		ft. TOC	Gallons	per foot:			0,16	gal
Depth to			40	ft. TOC		and the second second	sing (Well Vo	lume):	1.95	gal
Depth to	SPH: lumn in Well:		.20	ft. TOC ft.		vell volumes ent of Pump			5.85	gal) ft. TOC
water co	idilii iii vveii.			_'''	riaceini	ent or runn	make.	-		11.100
			Well Purging	_					7.	
Well Purg	ging Method:	Peristaltic Pump -		3.83	Monsoo	on Pump - Num	ber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1217	5.40	160mil/men	Inicial							1
1222	6.30	Bonil ma	489		30,00	103.5	86.1	1.197	1.68	
1225	6.54	(Pary/ma)	960	3.66	2911	1100	64.5	1.168	1-31	
1228	6.85	160m/mb		5.68	29.85	111.8	21.4	1.15)	0.98	
1231	2.04	160ml/m	2400		29.14	106.1	40.4	1.125	0.83	-
1234	1.09	(60 m/m)	2880		29.56	96.3	39.4	1-062	0.64	
1240		160 ml mm			2937	81.4	29.3	1.060	0.51	1/
1243	2.01	160ml m	3840		29.50	12.0	36.2	1048	049	/
	/				ing Data					
Sampling	Method: Per	staltic Pump-N	umber: 123			r:		Sampling	Time: 12	53
	Clear Grey [
	Mild □Strong		7 (6)				Clear	Low Med	dium 🔲 Hi	igh
Sample P	arameters	Conta	ainer Descript	ion		ervative		Filtere	ed y/n	
URO		2		1900	HCI	9		N		
Svoc	•	2	750 m	1	N			N		
P90/	280	2	500 m	1	N			N		
metal	15 / mercun	No.	250 ml		HNO	3		N		
1:330	red metals	1	125		N			N		
Remarks	:									
Sampler	s) Signature:	W								
		1	ASTM-D	6771-02: Stab	oilization of P	arameters:				

рН	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Groundwater Monitoring Field Data Sheet E002-1/205B Project Name: Project Name: Project Number: _ Location: Byman Date: A,E MF Arcadis PR Team: <10md Weather: Well casing Dia.: WELL CASING VOLUMES (per foot of water column) 3-1/2"=0.5 4"=0.65 6"=1.47 3"=0.37 2"=0.16 2-1/2"=0.26 1-1/2"=0.09 1-1/4"=0.06 Well Data ft. TOC Gallons per foot: gal Well Depth: ft. TOC Gallons per well casing (Well Volume): gal Depth to Water: 4,11 gal ft. TOC Three well volumes (x3): Depth to SPH: MIA ft. TOC ft. Placement of Pump Intake: 9.95 Water Column in Well: **Well Purging Information and Field Parameters** 123.83 Other _ Monsoon Pump - Number _____ Well Purging Method: Peristaltic Pump - Number _ Cumulative Depth to Cond. D.O. D.O. ORP **Turbidity** Flow Rate Temp. Volume Time Groundwater Ha (NTU) (mS/cm) (mg/L) (%) (°C) mV (ml/min) (gal) (ft) 7.55 Initial 10.49 m/madi 5.17 0.543 80 0.0 3 Oa 602 480 160 mm 1 m 20.03 1052 960 2.06 575 0.599 02 0.0 8.42 in 1000 30. 1055 2-50 0562 29,92 46.72 160 mm man 9.0 1058 1440 0.0 1,92 0 20 1927 5.97 29.83 120 0.0 (2000) min 101 45,95 2400 29:43 0-0 0-200 16000 mm 5.00 8.83 12.0 1100 0.550 01, 9 2887 5.08 1.58 160ml from 79.89 11.0 0-0 1101 9,26 1.35 5.79 0.0 0-560 29,97 9.8 3360 160ml ma. 1110 **Sampling Data** Sampling Methød: Peristaltic Pump-Number: 12383 Other: Sampling Time: 116 Color: Clear Grey Light Grey Light Brown Brown Other: Visual Turbidity: Clear Low Medium High Odor: Mild Strong -- Specify: **Container Description** Sample Parameters Preservative Filtered y/n voc's HUL 400 G-RO HCI Svocs M HN03 motals marcun HNO₃ DRO 2 500 im m Dissolved Motors 1125 N VOL Remarks: Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters:

рН	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of 1 ± 1.0 NTU



Temp

± 0.2 °C

Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

Project N:	ame: Pho	a Tar	ninal		Projec	ct Number:	E002	1605B		
							12/22	/11		
	Baye				Date.		+1+1	7.16		
	R Team:		asing Dia.:	2 11		12.7	, Ia	1		
Well ID: _	MW-87/	Well o					:	140		
			WELL CASIN	G VOLUMES	(per foot of v	vater column)				
1-1/4″=0.06	1-1/2″=0.0	9 2"=0.16	2-1	/2"=0.26	3"=0.3 Well Data	7	3-1/2"=0.5	4″=0.65		6"=1.47
Well Dept	th:	22	.30	ft. TOO	Gallons	per foot:			0.16	gal
Depth to		6.3	36	ft. TOO			sing (Well Vo	olume):	2.55	gal
Depth to			/A	ft. TO	and the second second	vell volumes			7.60	gal
Water Co	lumn in Well:		.94	ft.	Placem	ent of Pump	Intake:		14.	ft. TO
	No. Villago	1	Well Purging						1000	
Well Purg	ging Method:	Peristaltic Pump -		383	Monsoo	on Pump - Num	ber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0956	6.36	160minin	Initial	-						-/
0959	6.38	160m/ms	480	6.96	29.05	353.5	24	0.675	2.73	
1000	6.35	160m1/m	960	692	28.93	3817	0.0	0.678	2.41	
1005	6.38	160 m/ms	1490	6.90	98,90	393.6	0,0	0.680	2,29	
1008	6.34	160m1/m	1920	6.90	25.80	409.7	10.0	0.682	2.19	
1011	6.38	Kan mon	2400	6.89	28.79	418.8	62.6	0.684	2.10	
1014	6.38	160ml man	2880	6.88	2878	422.9	51.2	0.685	-	
101)	6.34	160m mn	3360	6.91	24.40	431.1)	68.3	0.689	2.03	-
	1									4
	/	1			ling Data					
Sampling	Method: Per	istaltic Pump-N	umber:	383	Othe	er:		Sampling	Time: 10	79
Color:	Clear Grey [Light Grey	Light Brown	Brow	n Other	:	/			
Odor:	☐Mild ☐Strong	g Specify: 🔨	rone		Visu	al Turbidity	: Clear	Low Me	dium 🔲 Hi	gh
Sample F	Parameters	Cont	ainer Descript	ion	Pres	ervative		Filtere	ed y/n	
C-BC		a		2	HCI			N		
DRO/O	RO		500 m		N			N		
SVOL	5	2	1500 L		W			N		
Metas	Morenny	1	250 m		HNO)3		N		
	elied Motab	1	125 M		N			N		
ırks		VX			-71					
		M								
Sa ?r	(s) Signature:	111								

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or ± 1.0 NTU whichever is greater



	0		N N					102 V 00	-0	
	ime: Pr					t Number:		102, 1605	5	
Location:	Baya	100 E	R		Date:	11	12)/11			
Arcadis P	R Team:	· MIF								
Well ID: _	WM-181) Well o	asing Dia.:	711		Weather	- 00	-9		
			WELL CASIN	G VOLUMES	(per foot of w	rater column)				
1-1/4"=0.06	1-1/2″=0.0	9 2″=0.16	2-1	/2"=0.26	3"=0.37 Well Data	7	3-1/2"=0.5	4″=0.65	6	5″=1.47
Well Dept	h:	43	27	ft. TOO	Gallons	per foot:			0.16	gal
Depth to			.80	ft. TOO	The state of the s		sing (Well Vo		5.03	gal
Depth to		^	1A	ft. TO		ell volumes			15.10	gal
Water Co	lumn in Well:		.47	ft.	Placeme	ent of Pump	Intake:	-	26	ft. TOC
			Well Purging	Informat	ion and Fie	ld Paramet	ers			
Well Purg	ging Method:	Peristaltic Pump -	Number 12 3	83	Monsoc	on Pump - Num	nber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0909	10,80	10/~	Initial							
0903	11,00	160/mn	480	6.86	22.00	214,0	4.8	1005	1.25	
0906	11.00	160/m-	960	6,84	21.85	248.1	4.3	1.045	0-85	
6060	11.00	160/mla	944 1231 44	6.83	28.18	26).6	0.0	1. 254	0.67	
1110	11.00	160/min	1920	6,42	28.40	284.9	0.0	1,061	0.55	
P914	11.00	1601min	2400	6182	26.50		0.0	1.063	0.45	
0917	11.00	bohin	5880	6.83	28 ML	311.1	10.5	1.063	0.45	
0000	11,00	rim/ali	3360		28.51	326.7	0.0	1.065	0 M2	/
0923	(1.00	160/mi-	3840	6.81	28.52	329,5	0.0	1,065	0.41	
Camalia	Method: Per	istaltis Dumn N	lumber: 10		oling Data			Sampling	Time: 09	34
	Clear Grey						,	34111911116	Time.	
-	Mild ☐ Strone			ш вгоw			: Clear	Low Me	dium 🔲 Hig	gh
	Parameters		ainer Descript	ion		ervative			ed y/n	1
Vocis			ials you		HL					
C100	,	2 v	lals you	L	HCI			N_		
DRO	080	2 3	500 ml		~			N		
svois	500 LS 2250~ M				N			N		
Motal	5 Morany	8.7	5000		HNC	3		N		
D.350	lved Metals		25 ~!		N			N		
Remarks	1 0.0 V	10								
Sampler	(s) Signature:	M								
		1	ACTM	6771 02. C	tabilization of	Paramotors:				

	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Groundwater Monitoring Field Data Sheet Project Name: ____ Puna Terminal P.002, 1605B Project Number: Location: Calon MF Arcadis PR Team: A.C. Well ID: MW -1502 JUMAZ Well casing Dia.: Weather: WELL CASING VOLUMES (per foot of water column) 2"=0.16 1-1/4"=0.06 1-1/2"=0.09 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: 50.30 ft. TOC Gallons per foot: 0.16 gal 6.05 Gallons per well casing (Well Volume): Depth to Water: ft. TOC 208 gal MA 21.24 Depth to SPH: ft. TOC Three well volumes (x3): gal 44.25 Water Column in Well: ft. Placement of Pump Intake: ft. TOC **Well Purging Information and Field Parameters** Well Purging Method: Peristaltic Pump - Number 123.83 Monsoon Pump - Number Other Depth to Cumulative Flow Rate ORP Turbidity Cond. D.O. D.O. Temp. Time Groundwater Volume pH (ml/min) (°C) mV (NTU) (mS/cm) (mg/L) (%) (ft) (gal) 09 44 0951 6,05 160ml/m inicial 0.810 07510154 694 -61.7 0.88 6.08 21,46 6.0 44001 960 ml 160mlm 21.46 -14.9 8 1.1 0957 0.411 6,05 5.95 0.60 6.00 Lemelma 1000 1440ml 6.95 21.48 0.0 0.811 -81.5 0.41 1920 m) 696 6.06 60 my mer 20,40 00 0.811 -673 0.41 Ecol 6,0% 0.0 1906 2400 mi 21.45 -91.3 0.811 0.31 27,46 1009 2440ml -93.6 0.0 0,811 035 6,08 1012 -91.9 0.0 3360 21.45 DE.O 6.04 bomlow 0. KIII Sampling Data Sampling Method: Peristaltic Pump-Number: 12383 Other: Sampling Time: 1923 Color: Clear Grey Light Grey Light Brown Brown Other: Visual Turbidity: Clear Low Medium High Odor: Mild Strong -- Specify: ______ Sample Parameters **Container Description** Preservative Filtered y/n C-80 2 VIDI 40 m HUL VOC'S 2 vial yomk HCI DRO /ORO Zesoon on L N N 5 VOU'S 1 250 mc N HNO₃ N N Remarks:

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

ו כדם

Sampler(s) Signature:



pH

± 0.2 phu

Temp

± 0.2 °C

Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet Project Name: Pane Project Number: E002,1605B 12/2 Location: Alli Arcadis PR Team: Well ID: MW - 151 Well casing Dia .: _ 54001 Weather: WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: ft. TOC Gallons per foot: gal Depth to Water: 6.38 ft. TOC Gallons per well casing (Well Volume): gal Depth to SPH: Three well volumes (x3): ft. TOC gal Water Column in Well: ft. Placement of Pump Intake: ft. TOC **Well Purging Information and Field Parameters** Well Purging Method: Peristaltic Pump - Number 123 87 Monsoon Pump - Number Other Depth to Cumulative Flow Rate Temp. ORP Turbidity Cond. D.O. D.O. Time Groundwater Volume pH (ml/min) (°C) mV (NTU) (mS/cm) (mg/L) (%) (ft) (gal) (2.34 1046 Hom/man inicial 1047 21.12 6.40 480m 6.35 160ml mas 2311 0,914 15.3 466 960m 6.40 21.11 (05) m la 001 248.3 1.8 0.914 4,52 6.40 21.74 0.913 1055 160 ml me 1440~1 263.9 0.0 4.43 6,40 1058 21,79 0.912 1m 0491 0.0 4.31 1101 6,47 2400 ml 21.8 292.0 0.0 0.911 4.34 1104 6,40 2400MI 304 Good ma DA Sampling Data Sampling Method: Peristaltic Pump-Number: 12383 Other: Sampling Time: 149 Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: _______ Visual Turbidity: Clear Low Medium High Sample Parameters **Container Description** Preservative Filtered y/n 2 VAI 40 ml a RO MOCS 2 vial 40 mz HCI N DRO/ORO 500 ML N 500C3 2250 m N metals/mercung 1 250 mu HNO₃ N MW-15P 2009NC Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters:

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or ± 1.0 NTU whichever is greater



Project Na	R Team:	Termin	ol		Proje	ct Number:	E002.	16050		
Location:	Entañ	b P.R			Date:	12/2	2/6			
Arcadis P	R Team:	A.C. F.	c.							
Well ID: _	MW- 15A	Well	asing Dia.:	2"		Weather	: 340	24		
						vater column)				
1-1/4"=0.06	1-1/2″=0.0	99 2″=0.16	5 2-:	1/2″=0.26	3"=0.3 Well Data	7	3-1/2"=0.5	4″=0.65		6"=1.47
Well Dept	th:	25.	5	ft. TOC	Gallons	per foot:			Dilb	gal
Depth to		1.8		ft. TOC			sing (Well Vo	lume):	3.09	gal
Depth to		- N	P	ft. TOO		vell volumes			11.33	gal
Water Co	lumn in Well:		3.61	ft.	Placem	ent of Pump	Intake:		13.95	ft. TO
		/	Well Purging		ion and Fie	ld Paramete	ers			
Well Purg	ing Method:	Peristaltic Pump -		143	Monsoc	on Pump - Num	ber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0/559	1.84	160m/m	inicial	_						
0902	2.08	KO m/mas	480m	6.19	21.64	369.1	0.0	0.055	0.60	
0905		160ml /mr	960 mi		27.75	348.8	0.0	0.759	0,47	
0908	2.16	16001/min	MCPPI	6.20	21.56	304.4	0.0	0,761	0.30	
0911	2.18	160 m/m	1920 ml	1	27.89	261.3	0.0	0.766	0.35	
Mea	2.10	160mm	2400 M		27.94	226.0	0.0	0.000	032	
0917	2.22	160 mlma	3360 M	6.19	21.98	191.1	0.0	0.992	0.32	/
0923	2.24	160ml mon	3840	6.16	23.99	157.6	0.0	0.194	0.29	1
0926	124	for men	4320		ling Data	130.7	8.6	8:335		
0929	233_/	Itani min	4400			115.3			0.25	
Sampling	Method: Per	istaltic Pump-N	umber: 12	3 83	Othe	r:		Sampling	Time:	38
Color:	Clear Grey [Light Grey	Light Brown	Brown	Other					
Odor:	Mild Strong	Specify:	None		Visu	al Turbidity:	Clear	Low Me	dium Hig	,h
Sample P	arameters		iner Descript	ion		ervative		Filtere	ed y/n	
VOUS			MON 16		HCI			N		
DRO/C	80	2 5	ion nh		~			N		
	Svous	2 2	50 mh		2			N		
-	Twerong	1 2	50,000		HNO			N		
D1330N	detem ber	1.1	15		N	3		N		
Remarks	_ BB-	122216	- 0842					14		
Sampler(AM								
	, ~ , //	tio 1	ASTM-D	6771-02: Sta	bilization of F	arameters:				

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Time

0922

0924

9579

0935

09 44

CRO C

Remarks: ON VOL Sampler(s) Signature:

Groundwater Monitoring Field Data Sheet Project Name: Puna Terminal Project Number: EQQ2, 1605B Location: (atano Date: 12/21/16 Arcadis PR Team: ____ Well ID: MW- 83R2 Well casing Dia.: ___ Weather: ____ WELL CASING VOLUMES (per foot of water column) 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 2"=0.16 1-1/4"=0.06 1-1/2"=0.09 Well Data ft. TOC Gallons per foot: Well Depth: 9.33 Gallons per well casing (Well Volume): ft. TOC Depth to Water: 28,08 gal Three well volumes (x3): ft. TOC Depth to SPH: 35,0 ft. TOC Placement of Pump Intake: Water Column in Well: **Well Purging Information and Field Parameters** Other Wo Monsoon Pump - Number Well Purging Method: Peristaltic Pump - Number Cumulative Depth to Turbidity Cond. D.O. D.O. ORP Flow Rate Temp. Volume pH Groundwater (NTU) (mS/cm) (mg/L) (%) (°C) mV (ml/min) (gal) (ft) Micial 5.55 0.0 2.23 1.053 307,4 6.66 Kui /min 26.41 6.95 0.946 26.45 300.5 0.0 1.89 ice/ms 15 0.920 1.58 6.00 314.8 2653 0.0 25 lal Inda 5,43 Sampling Data Other Bailer Sampling Time: 0959 Sampling Method: Peristaltic Pump-Number: Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: Visual Turbidity: Clear Low Medium High Filtered y/n Sample Parameters **Container Description** Preservative 2 vial 40 mi HCI 2 vial you HCI DRO/ORD N Metal / Mercum N 250ml N Dissolved Metals HNO₃

ASTM-D6771-02: Stabilization of Parameters:

EB-122116

N

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



pH

± 0.2 phu

Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Temp

± 0.2 °C

Groundwater Monitoring Field Data Sheet

Project Na	ame: Pur	na Tern	rinal		Projec	t Number:	E002.	1605B		
Location:	ame: Pur	aña P.	8.		Date:	12/	21/16			
Arcadis P	R Team:	A.C.	ME							
Well ID:	MW-AD-4	Well o	asing Dia.:	2"		Weather	: Shans	1		
			WELL CASIN	G VOLUMES	(per foot of w	ater column)				
1-1/4"=0.06	1-1/2"=0.0	9 2″=0.16	2-1	1/2″=0.26	3"=0.37 Well Data	7	3-1/2″=0.5	4"=0.65		6"=1.47
Well Dep	th:	19.	99	ft. TOC	Gallons	per foot:			0.14	gal
Depth to			33 18	ft. TOC	Gallons	per well cas	sing (Well Vo		2.18	gal
Depth to		N	//	ft. TO		ell volumes			6.58	gal
Water Co	lumn in Well:	13.	71	ft.	Placeme	ent of Pump	Intake:	100	13	ft. TOO
		/	Well Purging	Informat	ion and Fiel	ld Paramet	ers			
Well Pur	ging Method: 🌅	Peristaltic Pump -	Number 123	883	Monsoo	n Pump - Num	ber		Other	
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp.	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1027	6.28	160ml/min	inicial	-						
1030	7.75	160 m/m	480 M	5.85	29.23	1790	0.0	0.400	0,62	
1033	7.40	160 m/m	960 M	5.7"	29.11	193.6	0.0	0.395	0.46	
1036	7.60	160ml min			29.16	163/8	020	0.395	0.39	
1039	1.69	Ibomi min	1920 m		28.48		0.0	0.398	0.38	
1041	1.94	160 ml min	2400 m		28.75		0,0	0.402	0.24	
1044	8.08	160 ml/mm	2880M	5.77	28.59	1425	00	0405	0.35	
				ne	1	-				/
				1						<u>/</u>
	_/				ling Data					
	g Method: 🖊 Per							Sampling	Time: 10	56
Color:	☐Clear ☐ Grey [Light Grey	Light Brown	☐ Brown	Other:					
Odor:	☐Mild ☐Strong	g Specify:/	vore		Visua	al Turbidity	Clear	Low Me	dium 🔲 Hi	gh
Sample I	Parameters	Cont	ainer Descript	ion	Prese	ervative		Filter	ed y/n	
GRO.		4	vial 40-	~	HCI			N		
DROTO	Ro	2	- 500 ml		N			N		
Svoks	/mars	2	250 ml		ACHI	Vos		N		
01550	luet Metals	1	125 mg		N HNO	-		N		
								N		
Remarks	s:						~			
	(s) Signature:	M -								
		V								
			ASTM-D	6771-02: Sta	abilization of P	Parameters:				

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous read ± 1.0 NTU whichever is great



pH

± 0.2 phu

Temp

± 0.2 °C

Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet Project Name: Ring Terminal Project Number: E002 1605A Location: () Toolo MF Arcadis PR Team: Well ID: MW-33A Well casing Dia.: Weather: 3000 WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: ft. TOC Gallons per foot: 0.16 gal Depth to Water: 5.80 ft. TOC Gallons per well casing (Well Volume): 3.12 gal Depth to SPH: NID ft. TOC Three well volumes (x3): 9.37 gal Water Column in Well: 19.53 ft. Placement of Pump Intake: ft. TOC Well Purging Information and Field Parameters Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number Other Depth to Cumulative Flow Rate Temp. ORP Turbidity Time Groundwater Cond. D.O. Volume D.O. (ml/min) (°C) mV (NTU) (ft) (mS/cm) (mg/L) (%) (gal) 1112 5,40 60ml/mh Micrial 1116 450 M 160ml/mi 6.33 29.05 25.2 0,0 0,231 0.63 1119 8,70 160m/mr 960 NI 6.32 28.94 Q.0 11.8 0.231 0.41 1122 9.66 1440 mi 6,33 160ml /2m 28/12 6.3 30.0 0.230 0.39 11.05 1920 mi 6.31 28,49 43.1 0,231 0.4772 11.93 17.8 2400 mil 28,49 31,3 2.3 0 230 0.38 Sampling Data Sampling Method: Peristaltic Pump-Number: 12383 Sampling Time: 1)44 Other: Color: Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: Visual Turbidity: Clear Low Medium High Sample Parameters **Container Description** Preservative Filtered y/n C-RO 2 -ral your HCI Vous 2 vial uoni HCI N DROJORA 2 500 m N 2 250 M 50003 Metal Merchy 150 M HNO₃ N Dissolved Metals 1-125 M DAM Remarks: 0.0 Vo Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters:

Eh or ORP

± 20 mV

Tur

± 1.0 NTU



± 0.2 °C

± 0.2 phu

3% of reading

							G	iroundwate	er Monitor	ing Field	Data Sh
Project N	ame:	Juma	Tem	minal		Proje	ect Number	E 003	. 1605-6		
ocation:		ata	N'D	P. R		Date		12/2	1/16		
Arcadis F	PR Team:			Acc	MIF		•		1710		
	PNW-F						\\\+L	er: C/c			
_			wenc			S (per foot of			in U		
1/4″=0.06	5 1-1/2	2″=0.09	2″=0.16		1/2″=0.26	3″=0.: Well Data	37	3-1/2″=0.5	4″=0.65		6"=1.47
ell Dep	th:		14.15	1	ft. TO	C Gallon	per foot:			0.16	gal
	Water:		359	4	ft. TO			asing (Well Vo	olume):	1.74	gal
epth to				TAI	ft. TC	C Three	well volume	es (x3):	The second section is a second	5.23	gal
ater Co	lumn in Wel		10	90	ft.	Placem	ent of Pum	p Intake:		9	ft. TO
ell Purg	ging Method	Peristaltic	Pump - N	Well Purging						011	
	Depth to	0		Cumulative		1.50		L HITCHES		Other	T
Time	Groundwa (ft)	flow I (ml/n		Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
27	3.58	160ml/	min	inicial		o epito Avii					
30	3.73		min	480~1	6.37	21.12	260.0	62.4	0.553	0.23	
333	3.16			960 m	6.38		287.7	68.4	0.546	0.66	1
336	3.81	16oml	long	1440~1	6.40	27.11	310.7	59.8	0.534	0.80	1
339	3.86	160m	mg	1920 ml	6.45	21.00	334.1	96.0	0.510	1.10	
42	3.89	160ml		2400~1		26.94	345.5	39.4	0.499	1.29	
45	3.93	160m		2880ml			358.6	33.8	0,499	1/42	
348	3.94			3360 ml			369.6		0.502	1.57	
351	4.03	wowl	min	3840 m	6.59	21.02	310	24.5	0.219	1.60	
					Samp	ling Data					/
mpling	Method:	Peristaltic Pu	ımp-Nu	mber: 123	383	Othe	r:		Sampling	Time: U	105
		ey Light (
_		rong Specify						: Clear	Low \(\int \text{Med} \)	lium 🗀 Hi	gh
	arameters		Contai	ner Descripti	on	Prese	ervative		Filtere		5''
FRO VOC'S			2 1			nci					
00/p	80		2 50			HCI N			N		
Vac				0 ~1		N			N		
40	/morung	ī) ~!					N		-
1350	al Metals	1		1		HNO:			N		_
		ini Des		5 ml		//			N		
marks: mpler(s	s) Signature:	M ppr	3								
				ASTM-D6	771-02: Sta	bilization of P	arameters:				
	T	C1				- medicin of P	arameters:				
H	Temp	Conductivity	Dissolv	ed Oxygen		ALC: NO	Eh or	ORP Turi	bidity		

 $\pm\,10\%$ of reading or $\pm\,0.2$ mg/L, whichever is greater

± 20 mV

± 10% of the previou ± 1.0 NTU whicheve



Groundwater Monitoring Field Data Sheet erminal E002. 605B Project Name: Project Number: Location: Date: 12 Arcadis PR Team: Well ID: Well casing Dia.: Weather: WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: ft. TOC Gallons per foot: gal Depth to Water: 38 ft. TOC 1176 Gallons per well casing (Well Volume): gal Depth to SPH: M ft. TOC Three well volumes (x3): 526 gal Water Column in Well: 1102 ft. Placement of Pump Intake: P ft. TOC Well Purging Information and Field Parameters 12383 Well Purging Method: Peristaltic Pump - Number Monsoon Pump - Number Other Depth to Cumulative Flow Rate Temp. ORP **Turbidity** Cond. D.O. D.O. Time Groundwater Volume pH (ml/min) (°C) mV (NTU) (mS/cm) (mg/L) (%) (ft) (gal) 1439 3,34 160ml/mm Dicion 1442 1.58 28.32 450 NI 314.9 2,11 0,0 01585 1445 4.18 960ml 160 m) man 2815 2,3 0.544 9,09 1998 5.05 1440mi 160ml min 18:05 1.95 0.385 5.26 1920 mi 0.585 1951 28,12 409.1 0.0 1.85 2400m 5.66 m made 28-19 420,0 0580 1454 0.0 1450 5,98 6,07 Good ma 2580m 439.5 0,573 15 6,00 1500 29.9 490-6 5.0 1.56 0512 6,56 60 ml 3840 m 452.8 4.9 0.472 Sampling Data Sampling Method: Peristaltic Pump-Number: 12343 Other: Sampling Time: \524 Color: Clear Grey Light Grey Light Brown Brown Other: Visual Turbidity: Clear Low Medium High Odor: Mild Strong -- Specify: MONE Sample Parameters **Container Description** Preservative Filtered y/n CARO HUI yem Voc's wal HCI N DRODRO N 500 m N 500 63 250 m N Merch 250 m HNO₃ N Motor 125 ml N 010 1100 dow Remarks: Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters: Temp Conductivity Dissolved Oxygen Eh or ORP Turbidity ± 0.2 phu ± 0.2 °C 3% of reading ± 10% of reading or ± 0.2 mg/L, whichever is greater ± 20 mV ± 10% of the previous readin

± 1.0 NTU whichever is gre



Groundwater Monitoring Field Data Sheet F002, 605B Terminal Project Name: Project Number: Date: 12 Location: MI A.C Arcadis PR Team: Cloud Well casing Dia.: Weather: WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data 20.0 Well Depth: ft. TOC Gallons per foot: gal Depth to Water: .14 ft. TOC .6 Gallons per well casing (Well Volume): gal NA Depth to SPH: ft. TOC Three well volumes (x3): 60 gal 1.96 Water Column in Well: ft. Placement of Pump Intake: ft. TOC 4.13 **Well Purging Information and Field Parameters** Peristaltic Pump - Number _ 12343 Monsoon Pump - Number Other Depth to Cumulative Flow Rate Temp. ORP **Turbidity** Cond. D.O. D.O. Groundwater Time Volume pH (ml/min) (°C) mV (NTU) (mS/cm) (mg/L) (%) (ft) (gal) 1544 3.14 160ml/mh inicial 1541 3.20 0.45% 1,27 62.58 1000 /mm UKON 28.40 411.4 54,1 3 94 960ml 6,0001/m 1,15 421.4 0.459 78.42 36.1 9.31 1.11 55 160m/ma 901 0.459 IUU0 m 10-6 2.0.3 6.93 4,55 Maral Ima 1920 ml 28,43 400.1 13.9 0.457 551 109 0-459 4,85 28M2 559 1600 /ml 2400 m 6A3 4697 7,218 05 Sampling Data Sampling Method: Peristaltic Pump-Number: 12343 Other: Sampling Time: 169 Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: Mone Visual Turbidity: Clear Low Medium High **Sample Parameters** Container Description Preservative Filtered y/n G-80 HCI roch 2 NBJ MOM HCI N DRO /ORO 2 500 mL N SVOCS 250 m N Moruny 250 M HNO₃ N 125 ml N Remarks: Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous I ± 1.0 NTU whichever is



		n -				G	roundwat	er Monitor	ing Field	Data S
	ame:		ermina					1605 D		
ocation:	_ ca				Date:	12/	20/16			
Arcadis F	PR Team:	A.C	· M,							
Well ID: _	MW-AD-03	Well o	casing Dia.:	311		Weathe	r: 40	NO		
			WELL CASIN	IG VOLUME	S (per foot of v					
1-1/4"=0.06	6 1-1/2"=0.0	09 2"=0.10	2-	1/2″=0.26	3″=0.3 Well Data		3-1/2″=0.5	4″=0.65		6"=1.47
Well Dep	th:	5.	12	ft. TO	C Gallons	per foot:			0.16	gal
epth to		_ 3.	94	ft. TO	Col. 1 Inches and the color of		sing (Well V	olume):	1.50	gal
epth to			10	ft. TO	C Three v	vell volume	s (x3):		5,91	gal
Vater Co	olumn in Well:	11	28	ft.	Placem	ent of Pump	Intake:		9.50	ft. T
Well Pur	ging Method:	Peristaltic Pump -	Well Purging				ers		Other	
	Depth to		Cumulative			1 - 21 - 1				
Time	Groundwater (ft)	Flow Rate (ml/min)	Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
446	3.94	160/1/10	inicial							
949	5.10	(Cont) ma	480	5.68	21.61	325.9	38.2	0.358	1.98	
452	5,41	160ml/min	960	5.65	21.55	340,4	36.9	0.359	1.89	
455	5.51	160m1/mln	1440	5,69	21,46	355.2	24,0	0,364	1/81	
458	6.02	160m/mn	1920	5.68	21,46	365,7	31.0	0.310	175	
501	6.85	1600 min	2400	5.00	21,51	3/3/	22.0	0.30	1.00	
504	6.91	in made	2887	5.12	27,57	3804	30.5	0.384	1,62	
								-		/
										/
		/	10	7.7	oling Data					
	Method: Per							Sampling	Time: <u>15</u>	6
	Clear Grey [Brown	n Other:		-			
dor:	Mild Strong	g Specify:/	nove		Visua	al Turbidity:	□ Clear □	Low Med	lium 🔲 Hig	gh
	Parameters		iner Descript			ervative		Filtere	d y/n	
was voc		2 0			HCI			N		
DRO 106	20	2 50			HCI /			N		
3 vocs			1m 02		N			N	-	
metals	Mercun	1 2	50 MI					N		
1.21-1					HNO	3		N		
1:55du	ed Metal	1 150	5 ml		N			N	-5-0	
Remarks	- FB-1	22016 -	1525							
ampler(s) Signature:	Ar								
			ASTM-D	6771-02: Sta	abilization of P	arameters:				
Н	Temp Cone	ductivity Disso	lved Oxygen			Eh av	OPP 1 -	och falls.		
± 0.2 phu			% of reading or ±	0.2 mg/L w	hichever is gre	Eh or		rbidity 10% of the previous	215	

± 1.0 NTU whichever



Temp

± 0.2 °C

± 0.2 phu

Conductivity

3% of reading

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

						G	roundwate	er Monitor	ing Field	Data She
Project N	ame: Pan	n Term	rinal		Proje	ct Number:	E002	L. 1605 B		
Location:	CATAN	o P.P			Date:					
	R Team:									
	MW-P119	7	casing Dia.:		6	Weathe	. (1)	24		
WCII ID.	7.00				S (per foot of v			10		
1-1/4"=0.06	1-1/2"=0.0	09 2″=0.1	1	1/2″=0.26			3-1/2″=0.5	4″=0.65		6″=1.47
Well Dep	th:	2	1.15	ft. TO	C Gallons	per foot:			0.16	gal
Depth to				ft. TO	AND THE RESIDENCE OF THE PARTY		sing (Well Vo	olume):	221	gal
Depth to			1/A	ft. TO		vell volume			6.63	gal
Water Co	lumn in Well:	13	85	ft.	Placem	ent of Pum	o Intake:		18	ft. TO
Well Pur	ging Method:		Well Purging				ers		Other	
Time	Groundwater (ft)	Flow Rate (ml/min)	Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0859	11.15	160 ml/mm	inicial	-						
0902	12.20	160 ml/mn	440	459	29.29	392.9	0.0	0214	1,00	/
0905	12.68	160 ml/mo	960	4.60	29.40	395.9	0,0	0.214	1.88	
0908	13 .27	160 ml/mn	1440	4.61	29.76	399.6	0.0	0.205	1.95	
	A		1/4							-
			1							
			-							
										/
Sampling	Method: Peri	staltic Pump-N	lumber: 123	1000	oling Data Othe	r:		Sampling	Time: 09	118
Color:	Clear Grey [Light Grey	Light Brown	☐ Brow	n Other:					
Odor:	Mild Strong	Specify:	None		Visua	al Turbidity	: Clear 🗌	Low	lium Hig	gh
Sample P	arameters	Cont	ainer Descripti	on	Prese	ervative		Filtere	d y/n	
VOC		2	vials up	1	HCI			N		
C-RO		2	vials no	mi	Hel			N		
DRO OR	D	20	500 m		N			N		
Motal 7	Mercun	1.	250 ml.		HNO	3		N		
0,350/			125 ml		<i>N</i>			N		
Remarks		oc bbu								
Sampler(s) Signature:	M								
			ASTM-D	6771-02: St	abilization of P	arameters:				

Eh or ORP

± 20 mV

Turbidity

± 10% of the previous reading or ± 1.0 NTU whichever is greater



Sampler(s) Signature:

Groundwater Monitoring Field Data Sheet Project Name: Puna Terminal Project Number: E 002, 1605B Location: (aTerio Arcadis PR Team: A.C. Well ID: MW- PIK Well casing Dia.: cloud Weather: WELL CASING VOLUMES (per foot of water column) 1-1/2"=0.09 1-1/4"=0.06 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: ft. TOC Gallons per foot: 0,16 gal Depth to Water: ft. TOC 1.12 Gallons per well casing (Well Volume): gal Depth to SPH: ft. TOC Three well volumes (x3): 5.1) gal Water Column in Well: ft. Placement of Pump Intake: 12.0 ft. TOC **Well Purging Information and Field Parameters** Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _ Other Depth to Cumulative Flow Rate Temp. ORP Turbidity Cond. D.O. D.O. Time Groundwater Volume (ml/min) (°C) (NTU) mV (mS/cm) (mg/L) (%) (ft) (gal) nom/masi 0936 6.52 Micial 6.59 160ml/men 4.97 0937 480 30.06 4342 468 0.00 0,249 0942 160ml/m 4,92 30.35 6.61 960 4388 93.5 0.241 0,53 icon /min 6,62 4,93 0.241 0945 1440 30,51 4493 101.9 0.42 6.63 160 mln 4641 0948 1720 4.89 0,38 30.53 109.2 0,244 0.34 0951 6 63 160ml/min 2400 4,93 30,54 0.245 115.8 480.3 160mi /man 0154 4.94 0,241 0.32 6.63 2880 30.61 492.0 111.2 3360 0950 6.63 30.58 489.0 1600d/m 4,90 0.32 110.8 0.246 Sampling Data Sampling Method: Peristaltic Pump-Number: 12343 Other: ______ Sampling Time: 1000 Color: Clear Grey Light Grey Light Brown Brown Other: Visual Turbidity: Clear Low Medium High Odor: Mild Strong -- Specify: // Me Sample Parameters **Container Description** Preservative Filtered y/n VOL 2 vial 40ml HCI N 2 vial 40ml DRO/ORO N 2 500 ml 1 SUOCE 2 250 mc N Metal Merchy 250 ml HNO₃ N Dissolvet metals 1 125 M N N OD PPM Remarks: VOL

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Groundwater Monitoring Field Data Sheet

Drainst N	ame:P_~	- To-w	Start.		Dania	at Normala are	E003	11 OF B		
	(at					12	The state of the s	1005 0		
					Date:	12/	20/16			
Arcadis F	PR Team:	Mrc, A	M.P	- N/		1000		2/ 1		
Well ID:	MW-83A	Well o	casing Dia.:	3"		Weathe	:	101		
			WELL CASIN	G VOLUMES	(per foot of v	vater column)				
1-1/4"=0.00	6 1-1/2"=0.0	9 2″=0.10	5 2-1	./2″=0.26	3"=0.3 Well Data	7	3-1/2"=0.5	4″=0.65		6″=1.47
Well Dep	oth:		.23	ft. TO	Gallons	per foot:			0.16	gal
Depth to			3.86	ft. TO	The second second		sing (Well Vo	lume):	1.61	gal
Depth to			/A	ft. TO	en in house, and a re-	vell volumes			5.45	gal
Water Co	olumn in Well:	N	.36	ft.	Placem	ent of Pump	Intake:		9.50	ft. TOC
		,	Well Purging							
Well Pur	ging Method:	Peristaltic Pump -		383	Monso	on Pump - Num	ber		Other	()
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1039	3.86	icon/mn	inicial	_						-
1042	4,02	160ml/m/n	449	6.59	28.32	4168	2.2	0.650	4,28	. /
1045	4.88	want I min	960	6.60	28,10	429.4	4.5	0.652	3.84	
1048	5.15	160ml/mn	1440	6.62	21.71	439.9	1.5	0 655	3.42	
(201	5.36	160 ml/min	1920	6-69	21.15	444.6	9.8	0.664	3.08	
1059	5,62	160 m/ m/n	4997	612	21.69	453.7	4.2	0.658	2.81	
1057	5,86	160ml/m	SM 5880		21.78	457.2	2.0	0.659	2,60	
1100	6.15	160ml/mm	3360	6.14	21.92	459.2	0.0	0.664	2.50	/
1103	6.20	1600mi/m	3840	6.16	25,99	460.2	2.72	0.662	2.218	1
Color:	g Method: Per	Light Grey	Light Brown	343				Sampling	Time: <u>111</u>	3
Odor:	☐Mild ☐Strong	Specify:	None		Visu	al Turbidity	Clear	Low Me	dium 🔲 Hi	gh
Sample	Parameters	Cont	ainer Descripti	on	Prese	ervative		Filter	ed y/n	
VOC		2 4	al your							
DRO/OR		2 -	top about		HCI		-	N		
SVOX	t n		00 m		1			N		
Metal	Mercury	1 2	50		1			N_		
Dissal	ed metals	1 12	5 m		HNO	3		N		
					N			N		
Remark	s: 0.0. Vo	c ppm			1					
Sampler	(s) Signature:	M								
		4.0		Last All		and the same				
			ASTM-D	6771-02: St	abilization of F	Parameters:				

рН	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Project Name:

Well ID: MW-AD-DI

1-1/2"=0.09

2"=0.16

Flow Rate

(ml/min)

160 ml/ma

bonl/min

1600ml/mi

160ml/mi-

160m/min

ppn

160m

(Lacel)

Location: Arcadis PR Team:

1-1/4"=0.06

Well Depth:

Depth to Water:

Water Column in Well:

Depth to

Groundwater

(ft)

3.62

3.12

3-73

3,72

3.02

3.72

3.72

3.12

Depth to SPH:

Time

1239

1241

1295

1248

1251

254

1250

1300

VOL

30062

Sample Parameters

Remarks: _ O O VOL

Sampler(s) Signature:

DRO/ORO

Groundwater Monitoring Field Data Sheet E002, 1605B Project Number: Date: 12 cloud Well casing Dia.: _ Weather: WELL CASING VOLUMES (per foot of water column) 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data ft. TOC Gallons per foot: 0.16 gal 3.62 Gallons per well casing (Well Volume): ft. TOC 180 gal MIA ft. TOC 5.61 Three well volumes (x3): gal ft. Placement of Pump Intake: ft. TOC Well Purging Information and Field Parameters 12383 Well Purging Method: Peristaltic Pump - Number Monsoon Pump - Number Other Cumulative ORP **Turbidity** Temp. Cond. D.O. D.O. Volume pH (°C) mV (NTU) (mS/cm) (mg/L) (%) (gal) Dicio 2.30 28.14 480 348.8 29 4.62 0,382 9(0) 1.26 28,00 360.8 0.379 14.2 4.05 1440 2.21 28.06 3600 3218 3,62 0.318 229 1920 28:04 3020 0.30) 30.5 3.19 28.04 221 310 3 0.399 2400 3.82 2880 1,21 28-04 0.316 301.1 1.70 21.99 3360 1.26 304,7 0. 304 08.5 2016 Sampling Data Sampling Method: Peristaltic Pump-Number: 12383 Other: Sampling Time: Black Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: Visual Turbidity: Clear Low Medium High **Container Description** Preservative Filtered y/n 2 was your L HCI N 250 mu N HNO₃ N

ASTM-D6771-02: Stabilization of Parameters:

рН	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Groundwater Monitoring Field Data Sheet Project Name: Pany Teamina Project Number: E 002 1605B Location: COTOTO Arcadis PR Team: Well ID: MW-5 Well casing Dia.: Cloud Weather: WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data 20.5 Well Depth: ft. TOC Gallons per foot: gal 0.65 Depth to Water: 2.42 ft. TOC Gallons per well casing (Well Volume): 11.05 gal Depth to SPH: NIA ft. TOC Three well volumes (x3): 35.25 gal Water Column in Well: 18.08 ft. Placement of Pump Intake: ft. TOC **Well Purging Information and Field Parameters** Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number Other Depth to Cumulative Flow Rate ORP Temp. Turbidity Cond. D.O. D.O. Time Groundwater Volume pH (ml/min) (°C) mV (NTU) (mS/cm) (mg/L) (%) (ft) (gal) 2,42 1342 160ml /min midal 1345 2.89 160m/min 6,02 28,86 110.8 0.239 0,85 440 2.2 3.96 160ml/ma 960 28.89 11.4 0.49 34% 686 0.238 14,0 0.438 160 ml/1-1440 5.99 28.97 44.4 0.40 1351 3 11 3.00 1354 160 m /m 1920 3.98 28.95 39.8 0.34 11.2 0.238 MOON 19,5 2,400 5.98 0.31 1357 2.00 28.96 36.1 0.238 5.39 0,30 COF 11-001/m 2400 28,98 19) 0.239 1400 44.0 160 ml /mo 3.00 3280 1403 28.99 20.0 0.28 40-1 0.240 Sampling Data Sampling Method: Peristaltic Pump-Number: 12363 Other: Sampling Time: 430 Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: Visual Turbidity: Clear Low Medium High **Container Description** Sample Parameters Preservative Filtered v/n aRO 2 w/al Mom HUL yout HCI DRO / PRO N SVOLS 2 250 m N 250 HNO₃ N Disadal 125

ASTM-D6771-02: Stabilization of Parameters:

plicado

DUPDOI

Remarks: 0.0 Vo(

Sampler(s) Signature:

рН	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Temp

± 0.2 °C

± 0.2 phu

Conductivity

3% of reading

Groundwater Monitoring Field Data Sheet

Project N	Jame:	- To-	0=2==1		Draina	+ Number	FROM	. 1605 B		
	:_ Cat				Projec	Number	20/16	033D		
					Date:	11/	20/06			
	PR Team: A			- Nr			1			-
Well ID:	MW-AD-	Well	casing Dia.:	2"		Weath	er:()	-0		
			WELL CASIN	G VOLUMES (F	per foot of w	ater column)			
1-1/4"=0.0	1-1/2"=0.0	9 2″=0.1	6 2-1	1/2″=0.26 V	3"=0.37 Vell Data		3-1/2″=0.5	4″=0.65		6"=1.47
Well Dep	oth:			ft. TOC	Gallons	per foot:				gal
Depth to		4	345	ft. TOC	Gallons	per well ca	asing (Well Vo	lume):		gal
Depth to		4	.384	ft. TOC		ell volume				gal
Water Co	olumn in Well:	-		ft.	Placeme	nt of Pum	p Intake:			ft. TO
			Well Purging							
Well Pur		Peristaltic Pump -			Monsoon	n Pump - Nu	mber		Other	
Time	Purging Method: Peristaltic Pump - Number Depth to Flow Rate Cumulative				Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
		Y)		
										-
				-ka						
			012	01/01						
					-					
				-						
				20.00						
	g Method: Peri				Other				Time:	
	Clear Grey									
	Mild Strong	Specify:			Visua	l Turbidity	: Clear	Low Med	lium 🗌 Hig	h
Sample	Parameters	Cont	ainer Descripti	on	Prese	rvative		Filtere	d y/n	
					HCI			N		
					HNO ₃					
Remark	s:									
	(s) Signature:									
			B			_				
			ASTM-D	5771-02: Stabi	lization of Pa	rameters:				

 \pm 10% of reading or \pm 0.2 mg/L, whichever is greater

Eh or ORP

± 10% of the previous reading or ± 1.0 NTU whichever is greater

± 20 mV



Groundwater Monitoring Field Data Sheet Project Name: Propa Terminal Project Number: Location: LATONO P.R Arcadis PR Team: Well ID: MW- PIZI Weather: < lond Well casing Dia.: ___ WELL CASING VOLUMES (per foot of water column) 1-1/2"=0.09 1-1/4"=0.06 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data Well Depth: ft. TOC Gallons per foot: gal Depth to Water: ft. TOC Gallons per well casing (Well Volume): gal Depth to SPH: ft. TOC Three well volumes (x3): gal Water Column in Well: ft. Placement of Pump Intake: ft. TOC **Well Purging Information and Field Parameters** Other Briler Well Purging Method: Peristaltic Pump - Number Monsoon Pump - Number Depth to Cumulative Flow Rate ORP Turbidity D.O. Temp. Cond. D.O. Time Groundwater Volume pH (ml/min) (°C) mV (NTU) (mS/cm) (%) (mg/L) (ft) (gal) 1550 33 40 Anylor Inicial 1556 1.80 30.10 284,2 0,644 1251.6 1600 3.60 6.81 29.87 3 15.5 12.46.2 0.652 301.32 408 29.60 419.2 5.40 Bailer 1246.9 0.645 213 14 Sampling Data Other: Sampling Time: 162) Sampling Method: Peristaltic Pump-Number: Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: NOAC Visual Turbidity: Clear Low Medium High Sample Parameters **Container Description** Preservative Filtered y/n TPH-GRO 2 4 Vials - 40 ml HCI N None 2 1 amber - 500 ml IPH-DRO VOC N TPH-ORO - DRO 21 amber – 500 ml None N 1 plastic - 250 ml HNO₃ N None N 1645 Remarks: 30 CKETO Sampler(s) Signature: ASTM-D6771-02: Stabilization of Parameters:

Eh or ORP

± 10% of the previous reading or ± 1.0 NTU whichever is greater

± 20 mV

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

pH

± 0.2 phu

Temp

± 0.2 °C

Conductivity

3% of reading



Groundwater Monitoring Field Data Sheet Project Name: Pana Terminal E002-16056 Project Number: Mr cataño Location: Arcadis PR Team: Well ID: MW- P 124 Weather: Well casing Dia.: ____ WELL CASING VOLUMES (per foot of water column) 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 1-1/4"=0.06 1-1/2"=0.09 2-1/2"=0.26 Well Data 44.20 ft. TOC Gallons per foot: Well Depth: gal 1.82 Depth to Water: ft. TOC Gallons per well casing (Well Volume): gal Three well volumes (x3): 5.41 Depth to SPH: ft. TOC gal 38.50 Placement of Pump Intake: ft. TOC Water Column in Well: ft. **Well Purging Information and Field Parameters** Other Bailer Well Purging Method: Peristaltic Pump - Number_ Monsoon Pump - Number _ Depth to Cumulative Flow Rate ORP **Turbidity** Cond. D.O. D.O. Temp. Groundwater Time Volume pH (ml/min) (°C) (NTU) (mS/cm) (mg/L) (%) mV (ft) (gal) 1451 32.80 Bailer micial 30.00 9351 495.96 1.80 85,4 1502 3,60 0.064 324.61 1510 29,32 445.1 283,1 29.25 42,05 5 40 130.1 Bailer 446.0 0.42 45020 Sampling Data Sampling Method: Peristaltic Pump-Number: _______ Other: _____ Sampling Time: \(\sqrt{5\sqrt{5}} \) Color: Clear Grey Light Grey Light Brown Brown Other: Visual Turbidity: Clear Low Medium High Odor: Mild Strong -- Specify: 1000 Sample Parameters **Container Description** Preservative Filtered y/n TPH-GRO VOC N 4 Vials - 40 ml HCI 2 1 amber - 500 ml TPH-DRO G-RO None N TPH-ORO - DRO 2 1 amber - 500 ml None -HNO3 MONE Lead 5 voc's N 2 plastic - 250 ml Zamber -500 ml HN03 None Dissolved metals 125 Remarks: Sampler(s) Signature:

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



_	0	ــــــــــــــــــــــــــــــــــــــ	, o-loo\		A		oundwater	-		
Project Na	me: Pn	ma Ter	- Minai			t Number: _	100	16		
Avec die DE	R Team:	100	ME		5570					
	MW-P123		asing Dia.:	21		Weather	: Sun	77		
well ib	1	- Weil C			(per foot of w			1		
1-1/4"=0.06	1-1/2″=0.0	9 2″=0.16		/2"=0.26	3"=0.37 Well Data		3-1/2"=0.5	4″=0.65	•	5″=1.47
Well Dept	h:	20	5.2	ft. TOC	Gallons	per foot:			0.16	gal
Depth to V		*6	1,00	ft. TOC	Call Call and Call Call Call Call Call Call Call Cal		sing (Well Vo	lume):	280	gal
Depth to S				ft. TOO	and the same of	ell volumes		-	8,40	gal ft. TO
Water Col	umn in Well:).5	ft.	Placeme	ent of Pump	intake:		1).43	11.10
Jo had			Well Purging	Informat		ld Paramet			Other	
Well Purg	•	Peristaltic Pump -	Cumulative		INIOIISOC	n Fump - Ivan		The state of		
Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Volume (gal)	рН	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1321	8,20	160~1/~	inicial							
1324	9.85	160ml/min	480 mi	5.05	32.11	3422	0=0	0.151	394.43	
1327	9.60	16001/00	960 m	5.02	32.68	367,3	0.0	0.15)	403.79	
1330	9,53	Kon//min	1440M1	5.03	33.12	395.8	0.0	0.156	378.48	/
1333	9.35	160m/min	1920-1		34.17	410.0	0.0	0.156	373.31	
1336	9,24	160 ml/min	2400 ml		34.70	414.7	0.0	0.156	356.17	
1339	9.82	160 ml/min	5880 VI	4.96	3253	412,2	8-0	9.153	333.30	
1342	10.13	loom / gin	3360~1		32.01	421.8	0.0	0.151	293.40	-
1345	10.77	ibomlim	3840ml	4.80	32,24	289.6	0.0	0.150	241.72	1
Sampling	Method: Per	ristaltic Pump-N	lumber: 12		oling Data	r:		Sampling	Time:	131
	Clear Grey				n 🔲 Other	:				
1	Mild Strong		A In	re			: Clear 🗆	Low Me	dium 🔲 Hi	gh
	Parameters		ainer Descript	ion	Pres	ervative		Filter	ed y/n	
TPH-GRO) \	24 Via	ls – 40 ml		HCI			N.		
100000000000000000000000000000000000000	LVOL	ZXam	ber – 500 ml		Non	e		N		
TPH-ORC	- DEO	2 1 am	ber – 500 ml		Non	e		N		
Lead 5	vous,	2 pla	stic – 250 ml		-HNC)3*		N		
PAH M	etals/mere	mry 12 am	ber – 500 ml		Non	e		N		
Remarks	s:	000	OPM							
Sampler	(s) Signature:	an								
1000	Se demande de		ASTM-I	D6771-02: S	tabilization of	Parameters:				

Dissolved Oxygen

± 10% of reading or ± 0.2 mg/L, whichever is greater

Conductivity

3% of reading

Temp

± 0.2 °C

pH

± 0.2 phu

Turbidity

± 10% of the previous reading or

± 1.0 NTU whichever is greater

Eh or ORP

± 20 mV



Groundwater Monitoring Field Data Sheet Project Name: Terminal Project Number: E002.16056 catato Location: Date: MIF Arcadis PR Team: cloud Well ID: MW- PIZZ Well casing Dia.: _ Weather: WELL CASING VOLUMES (per foot of water column) 1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 Well Data 0.16 Gallons per foot: Well Depth: ft. TOC gal 1461 Depth to Water: ft. TOC Gallons per well casing (Well Volume): gal ft. TOC Three well volumes (x3): 5.42 gal Depth to SPH: 18.75 Placement of Pump Intake: ft. TOC Water Column in Well: ft. **Well Purging Information and Field Parameters** Other Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number Cumulative Depth to Flow Rate Turbidity Cond. D.O. D.O. Temp. ORP Time Groundwater Volume pH (°C) (ml/min) mV (NTU) (mS/cm) (%) (mg/L) (ft) (gal) 1129 14.83 160m1/mm micial 1.76 29.59 341,6 1132 160~1/min 460.01 15.60 0,0 0.619 112.38 0.0 97,54 15,06 960 ml 6.14 29,48 362.8 0.620 1135 1440 ~1 6.94 301-1 0.0 0.622 91.725 15.84 160 m)/m 21.50 1138 3808 0,0 0-623 86.16 15.93 1920 ml 29.48 1141 0.672 29.48 388.4 0.0 80,93 160 ml/ma 2400 ml 6.12 1144 16.01 1892 0.0 2880 m 6.04 27-50 393.7 0.618 16.11 1140 12,05 16:14 160m/m 3360ml 395.3 0.634 1150 0,0 16,09 3840ml 669 0.641 1153 160ml /am 29.61 6250 Sampling Data Sampling Method: Peristaltic Pump-Number: 12343 Other: Sampling Time: 12343 Color: Clear Grey Light Grey Light Brown Brown Other: Visual Turbidity: Clear Low Medium High **Sample Parameters Container Description** Preservative Filtered y/n TPH-GRO VOC Vials - 40 ml HCI amber - 500 ml JPH-DRO C-RO 1 amber - 500 ml N TPH-ORO - DRO None 1 plastic - 250 ml HNO₃ N 12 amber - 500 ml None N

ASTM-D6771-02: Stabilization of Parameters:

O.D PPM

Remarks: __

Sampler(s) Signature:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



Groundwater Monitoring Field Data Sheet Project Name: Para Terminal E002,16056 Project Number: Location: (aTaro Date: Arcadis PR Team: Well casing Dia.: ___________ cont Well ID: MWP120 Weather: WELL CASING VOLUMES (per foot of water column) 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47 2"=0.16 2-1/2"=0.26 1-1/4"=0.06 1-1/2"=0.09 Well Data Gallons per foot: 0.16 ft. TOC gal Well Depth: 13.20 Gallons per well casing (Well Volume): ft. TOC gal Depth to Water: ft. TOC Three well volumes (x3): gal Depth to SPH: 13.1 Placement of Pump Intake: ft. TOC ft. Water Column in Well: **Well Purging Information and Field Parameters** Well Purging Method: Peristaltic Pump - Number 123 83 Monsoon Pump - Number _ Other Cumulative Depth to D.O. D.O. Flow Rate Temp. ORP Turbidity Cond. Groundwater Volume pH Time (NTU) (mS/cm) (%) (ml/min) (°C) mV (mg/L) (ft) (gat) ~ 1035 13.20 160 min 6.79 29.09 3319 82.64 bon min 480 ml 0.0 0.843 1038 13.40 960 ml 6.43 29.04 00 0.846 65.87 1041 13.39 160 ml /min 3368 6.82 28.99 340.1 0.0 0.845 53.39 ile al min 1440 mi 1044 13 40 28.95 0.0 46.55 Hord/min 1920 ml 6.83 346.8 0.844 1041 13.40 28.94 354.1 2400 ml 6.63 0,0 D.842 44.96 1340 11.0ml/min 1050 1053 **Sampling Data** Sampling Method: Peristaltic Pump-Number: 123 83 Other: Sampling Time: Color: Clear Grey Light Grey Light Brown Brown Other: Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High **Container Description** Preservative Filtered y/n Sample Parameters TPH-GRO-VOL 2 4 Vials - 40 ml HCI 1 amber - 500 ml TPH-DRO GRO None 14 (A N TPH-ORO - DRO 2 2 amber - 500 ml None plastic - 250 ml Lead Sypus HNO₃ N 2 amber - 500 ml 125 Moran None N

ASTM-D6771-02: Stabilization of Parameters:

O.O PPM

Remarks: VOC
Sampler(s) Signature:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater



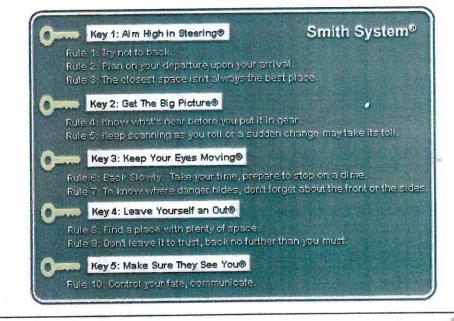
Motor Vehicle Insk dion Form

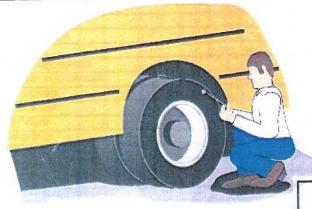
Project Name and Number:	e002.14	05/	-	Project Lo	ocation:	, a	1 1			Vehicle M	ake/Mod	el/l ic	#•	and the second second second	60710-7071
Lama Terminal		036			cata	50	PR			cheiro	LL S	1	ado 93	24 202	
		1			, ,					1 6, 100 - 0	101 01	10es	1	17 303)
Date		9/16		12	/20/10	_	12/21,	160		12	22/14		T	-	
Vehicle Operator	Ac			A	. C.		A.C			1	1.6			-	
Daily Odometer Reading	320	90			104		32230			313	30				
Inspection:							044)	0		32	120				
Daily	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Accordable	T = = -	
Tires – condition/tread			П	1		\vdash \sqcap		—	П	- Tredeptable	Dencient	IN/A	Acceptable	Deficient	1
Tires – air pressure	3		IT		H	H	1 7	H	H			- -			
Jack/spare tire	3					H	Ď	 	H		 		<u> </u>		
Light Switch				1	H	H	1	H	H			H	Щ		
Headlights				7	H	H	7	H	H	1		닏			
Tail Lights			П		H	H	ā	H	H						
Brake lights			n		H	Ħ	H	H	H			닏			
Turn signals					H	Ħ		H	H	<u> </u>		Ц_			
All glass and mirrors			Ħ	3/	H	H			H			닏	<u>Ц</u>		
Windshield wipers			П	P	H	H	37	H				닏	<u> </u>		
Fuel	□ F□% ☑ ½	□¼ □E		□ F□% □ ½	0% DE	H	O FO% 0 %	□¼ □E	H	0 F 0 % 0 %	Dr. DE	Щ.	☐ F□% □ ½		
Parking brake			F			Ħ						닉	U FU% U %	□% □E	
Horn	1 3				H	H			H		H	\vdash			
Steering wheel play	D'		Ħ		H	Ħ			H			닏			
Brakes	1 P		Ħ		H	Ħ		-H	H						
Body damage	1		Ħ		H	H			H			-			
Under vehicle – Leaks/obstructions			T				H	H	H	THE COLUMN		ᆜ			
Reverse warning			T	7	Ti-	H	3	H	H			ᆜ			
Prepared for weather	3			3		Ħ	7		H			Ц			
Overall vehicle cleanliness	G/					H	B	H	-	7		-			
Weekly		Ac	ceptabl					Deficient							
Engine oil			T		-								N/A		
Coolant level			B/					-H-							
Transmission oil level			H					-							
Brake fluid level	()		F					-H-							
Hydraulic oil			T												
Battery			T							E					
Belts/hoses								-H							
Miscellaneous vehicle performance			0												
Trip Planning															
JMP signed by all operators?	₽Ýes			- This											
JMP located on site?	☐Yes			□No											
Modifications documented and approve	ed? Yes			□No □No											
Basic H&S supplies/equipment	First aid	cit LEire	ovting	guisher	Пр.я-	ntin en	£=4								
	Camera		adside	warning equip	Reflection Disconnent (flar	e, flag	etc.) Flas	hlight							
f "deficient" is noted (other than fuel), p	olease explain														
(Saiot titali luol), i	ologo explain	DEIOW ATIC	incluc	e what correc	uve action	was ta	aken and the	date it was	taken	·					
							V								



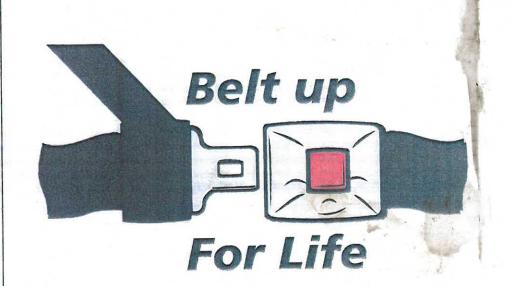
Safety Reminders

- Drive defensively scan road ahead and anticipate actions of other drivers.
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- Adjust seat / mirrors / headrest / steering wheel and ensure clean windows with no obstructions
- Secure loose items.
- Eliminate distractions mobile phone use is not allowed while driving by ARCADIS policy, and is also forbidden by states, countries, regions.
- Obey all posted traffic signs / signals.
- Maintain safe following distance use "4-second rule."
- Adjust speed / driving habits for adverse road/weather conditions.
- Limit backing up; look behind vehicle for traffic / pedestrians / parked vehicles / objects.
- Watch for pedestrians / cyclists / construction crews.
- Check mirrors frequently; stay out of other drivers' blind spots.
- Use signals prior to turns and lane changes.











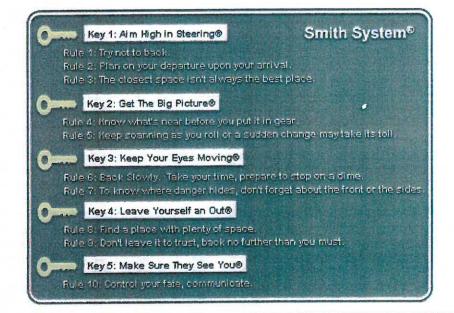
Motor Vehicle Ins. dion Form

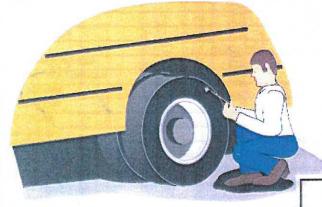
Project Name and Number:	002.160se	5		Project Lo	Boyar		P.R			Vehicle Make/Model/Lic#: Chevrolett 5 i Averago 93430					
Date	12./2	27/14		15/5	24/1			,							1
Vehicle Operator		1116			18/16		12/29/	16			2				
Daily Odometer Reading	AL	-		A.			ALC				A.L.				
Inspection:	325	51		329	560		33280)		-35	586				
	Acceptable	D-C-14	NUA												
Daily	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A
Tires – condition/tread	<u> </u>		\perp												tn
Tires – air pressure			Ц											T T	†#
Jack/spare tire			Ц	4			3								TH
Light Switch	<u> </u>		Ц				7							TH	15
Headlights							Ď							n	TH
Tail Lights				3									T T	H	
Brake lights				4								Ħ		H	TH
Turn signals												\Box	Ħ	H	PD
All glass and mirrors														n	
Windshield wipers	0 FQ% 0 %		ᆜ											n	TH
Fuel	U F 10% U /2	0% DE	ᆜ	0 F0% 0%	□% □E		□ F□¾ □ ½	□% □E		□ F□% □ ½	□¼ □E		□ F□% □ ½	□¼ □E	十百十
Parking brake	<u> </u>	Ц	Ц												
Horn			Ш											ΠĒ	TH
Steering wheel play Brakes		\perp		Z,										Ħ	TH
			Ц	3			U								TH
Body damage							ď							ΠĒ	
Under vehicle – Leaks/obstructions	2													T T	TH
Reverse warning															TH
Prepared for weather							3							n	H
Overall vehicle cleanliness	9													T T	TH
Weekly		Ac	ceptabl	е				Deficient					N/A		
Engine oil									*						
Coolant level													H		
Transmission oil level			2										H		
Brake fluid level													H		
Hydraulic oil			3							4					
Battery										*			2º 1		
Belts/hoses													H		
Miscellaneous vehicle performance														72774 1	
Trip Planning	***														
JMP signed by all operators?	Yes	-Herrich T Vice		□No		- 4-									
JMP located on site?	☐ Yes			□No											
Modifications documented and approv	ed? Yes		-	□No											
Basic H&S supplies/equipment	First aid	cit Eiro	evting		Reflec	tive e	foh vest								
- IIII III Ouppiion oquipiiioit	Camera	Roz	adside	warning equi	pment (flar	e, flag.	etc.) Flas	hlight							
15 4 4 - 5 - 1 - A7 1 A - 1 / 11 11 A															
If "deficient" is noted (other than fuel),	please explain	below and	includ	de what correc	ctive action	was to	aken and the	date it was	taken						



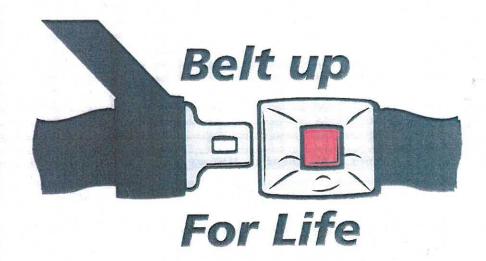
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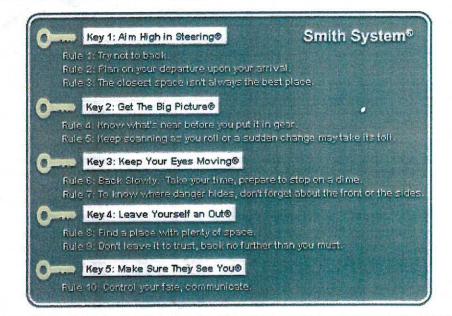
Motor Vehicle Ins, dion Form

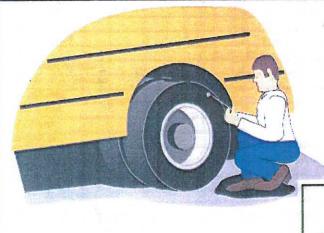
	Infrastructure, ironment, buildings															
Project Name and Number: e	002.1605	B		Project Location:						Vehicle Make/Model/Lic #:						
Phona Termina				Boyan		P.R.				cherrole						
	***************************************			Dogor		1/11/	-			Chartole	re 311	NG PO	D 434	-305		
Date	01/03	114		orlan	111		01/05	- /IA		T						
Vehicle Operator	A·c			AR	(1)		A-C	10)								
Daily Odometer Reading	32699			3243			3300	10								
Inspection:	34677	5		3176	9		330	77								
Daily	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Accontable	Definition	NI/A		T = -		
Tires – condition/tread	14.	1-6	П	[7				Delicient		Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	
Tires – air pressure			H		- H-	H	7	-		<u> </u>	<u> </u>					
Jack/spare tire	1				- H-	H	1			<u> </u>						
Light Switch	1 7		H	1	 	H			H	<u> </u>		Щ.	<u> </u>	<u> </u>		
Headlights	1 8	1	H		$\vdash \vdash \vdash$	ᅮ	3,	H	Н			ᆜ	<u> </u>			
Tail Lights		i H	H	9,	$\vdash \exists \vdash$	H	1	H	<u> </u>			<u> </u>	<u> </u>			
Brake lights		T H	Ħ		片片	H	3	H	<u> </u>	<u> </u>			<u> </u>		1 4	
Turn signals		H	H	H	H	H		- H -	H	$\vdash\vdash\dashv\vdash$		片	<u> </u>	+-4-		
All glass and mirrors		HHH	Ħ		H	H		H	H			H	<u> </u>	- -		
Windshield wipers	1		Ħ	1		Ħ	1	H	H	H		౼			18	
Fuel	□ F□% □ ½	□% □E	Ħ	O F D 1/2	DV DE	Ħ	DF0% 0 %	0% DE	H	□ F□% □ ½	□¼ □E	井	□ F□¾ □ ½		- -	
Parking brake			П	B		Ħ	TT		H			+		0,400	+님-	
Horn	1			4		Ħ	7	H	H	 		+	<u> </u>			
Steering wheel play			Ħ	B		Ħ	7	H	H	H	H	+			H	
Brakes	1				Ħ	Ħ	7	H	H	H	H	H			-	
Body damage	1 3				H	T	3		H		H	H	H-		+	
Under vehicle - Leaks/obstructions	1 2					T	F	TH	Ħ		H	H	H		$+$ \vdash \vdash	
Reverse warning				~		Ī	3	T	H			+	- H	- H-	+#-	
Prepared for weather	1			-			7	THE STATE OF THE S	Ħ		H	H	H		H	
Overall vehicle cleanliness	9						7		H	H	H	H	H	- H-	+#-	
Weekly		Ac	ceptabl	le				Deficient					N/A			
Engine oil																
Coolant level			-					H					-H			
Transmission oil level								Ħ		~						
Brake fluid level	(A)							Ħ					— —			
Hydraulic oil			3										— H			
Battery										<u> </u>			# H			
Belts/hoses			3										H			
Miscellaneous vehicle performance													H			
Alexander and the second secon												-				
Trip Planning																
JMP signed by all operators?	✓Yes			□No												
JMP located on site?	□Yes			□No												
Modifications documented and approv				□No				**								
Basic H&S supplies/equipment	First aid I		e extin	guisher	Reflec	ctive s	afety vest						***************************************			
	Camera	□Ro	adside	warning equi	pment (flar	e, flag	, etc.) 🔲 Flas	hlight								
15 % d = 5 - 1 - 10 1 4 - 1 / 11 11 1 - 1						7070		-								
If "deficient" is noted (other than fuel),	please explair	n below and	d inclu	de what corre	ctive action	was t	aken and the	date it was	s taken							



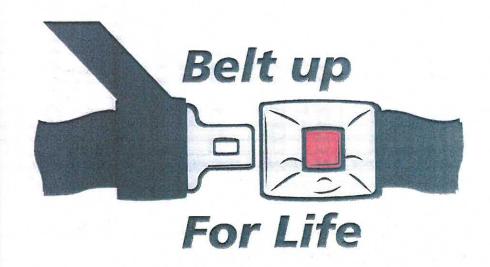
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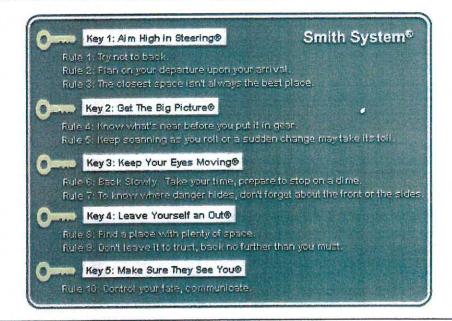
Motor Vehicle Ins, dion Form

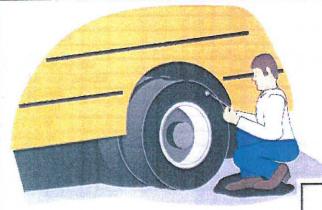
Project Name and Number:			Project Lo	cation:	,3 mr , .	-			Vehicle Make/Model/Lic #:							
Puma Terminal	E001 . 16	05B			Bayan	~	0-6			chevrolett Silverado 934-305						
Date	01/1	0/17		01/1	1/1		T - 2	1/12/	1	Т						
Vehicle Operator		AL		ALC	,,,		1	A								
Daily Odometer Reading	33	433		339			333	1 1								
Inspection:		100					23	3 8 0		<u> </u>						
Daily	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Accordants	15.51	T -2.72	
Tires - condition/tread	B	$\vdash \sqcap$		100			Triboopiusie	Delicient		Acceptable		N/A	Acceptable	Deficient	N/A	
Tires – air pressure		H	+#-	H	H	H		H	H	<u> </u>		4	Щ			
Jack/spare tire		TH	$\vdash \vdash \vdash$		- H -	H		H					<u> </u>			
Light Switch	P	H	H		H-	 		- H	Н.	<u> </u>		-님-	<u> </u>			
Headlights	F	T H	H		H	- H-		H	H	<u> </u>		⊢				
Tail Lights	P	TH	ΤĦ		H	H		H	H	HH		⊢	<u> </u>			
Brake lights	P		H		H	H		H	H			+	<u> </u>	<u> </u>	144	
Turn signals		Η	TĦ		H	H			H	H-H-		-H	<u> </u>		14	
All glass and mirrors	T C	TF	Ħ		H	H	F	H	H	 	H	⊢	<u> </u>		14	
Windshield wipers	P)		I	1	H	H	TA .	H	H	H		-H-	<u> </u>		14	
Fuel	□ F 🗗 % □ ½	₽% DE	TH	OFD% 0 %	□% □E	H	0 FO% 03%	0% DE	H	0 F 0 % 0 ½	0% DE	井	□ F□% □ ½	□¼ □E	+#-	
Parking brake					П	Ħ	B	П	H			-H-		DA 05		
Horn			Ħ		Ti-				H	H		+	H			
Steering wheel play	4		TH	E/	Ħ	H		H	H	H		뭐	H			
Brakes	4				n	Ħ		TH	H		H	H			14	
Body damage	8					H			H	- H	H	ㅐ	- H			
Under vehicle - Leaks/obstructions	3					T			H		H	H	H	- -		
Reverse warning	8					T		T	H		-H	+	- H -		H	
Prepared for weather				T.			1		H		H	H	- H			
Overall vehicle cleanliness				2					H		-	\dashv	 H		1	
Weekly		A	cceptabl	le				Deficient					N/A	<u> </u>		
Engine oil			T				170 / P M						19//			
Coolant level			1					H					- 			
Transmission oil level			F					H								
Brake fluid level	Ta .							Ħ					- H			
Hydraulic oil			B					Ħ					- 			
Battery			4					T		*			- H			
Belts/hoses			-					Ħ					 			
Miscellaneous vehicle performance								5					=======================================			
Trip Planning	7300 - 101															
JMP signed by all operators?	☐Yes			□No								-				
JMP located on site?	□Yes			□No												
Modifications documented and approve				□No												
Basic H&S supplies/equipment	First aid I	kit ☐ Fir ☐ Ro	e exting	guisher	Reflepment (fla	ctive s re, flag	afety vest ı, etc.)	hlight								
If "deficient" is noted (other than fuel), p	olease explair	n below an	d inclu	de what corre	ctive actio	n was t	aken and the	date it was	s taken							



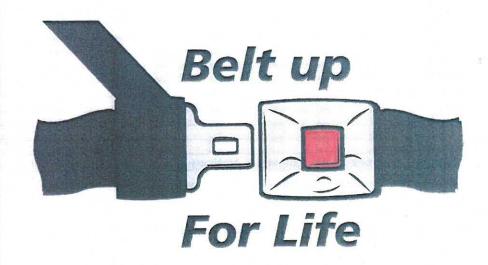
Safety Reminders

- Drive defensively scan road ahead and anticipate actions of other drivers.
- Seat belts must be worn by all passengers at all times.
- Adjust seat / mirrors / headrest / steering wheel and ensure clean windows with no obstructions
- Secure loose items.
- Eliminate distractions mobile phone use is not allowed while driving by ARCADIS policy, and is also forbidden by states, countries, regions.
- Obey all posted traffic signs / signals.
- Maintain safe following distance use "4-second rule."
- Adjust speed / driving habits for adverse road/weather conditions.
- Limit backing up; look behind vehicle for traffic / pedestrians / parked vehicles / objects.
- Watch for pedestrians / cyclists / construction crews.
- Check mirrors frequently; stay out of other drivers' blind spots.
- Use signals prior to turns and lane changes.











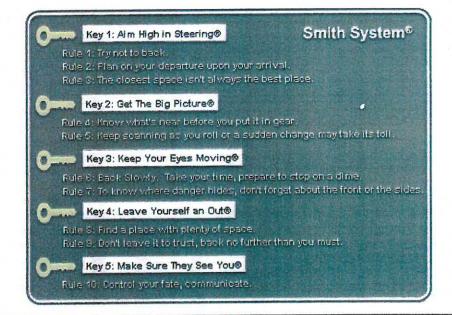
Motor Vehicle Ins. dion Form

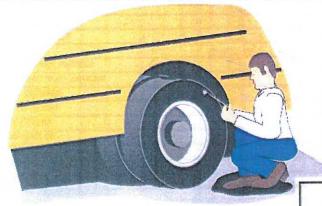
Project Name and Number:	1	Project Location:						Vehicle Make/Model/Lic#: Cherrolett Sirveralo 934 -305							
	ma To Ecoz.	160213			000		1001			Cherro	ett Sur	vera 0	174	-305	
Date	01/10/	15		01/1	8/3		01/19	11					T		
Vehicle Operator	1 4/				8/1)		- 1	/\)							
Daily Odometer Reading	337	30		335	10		A .								
Inspection:	301			337			338	(1)		L					
Daily	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	A				_	
Tires – condition/tread			П	1	T T			Dencient		Acceptable	Deficient	N/A	Acceptable	Deficient	N/A
Tires – air pressure		 	H	H	$\vdash \vdash \vdash$	H					<u> </u>				
Jack/spare tire		H	H		_=	H									
Light Switch		H	 		-H	Ц.									
Headlights		 -	 	H	<u> </u>				Щ						
Tail Lights			H			H			Ц						
Brake lights			 	H	H			Щ	<u> </u>						
Turn signals		 	H	terminal /											
All glass and mirrors		H	-#-		-H	부									
Windshield wipers	1		H			-									
Fuel	D F D % D 1/2	10% DE	H	0 F 0 % 0 %	□¼ □E	⊢	0 F 0 % 0 %								
Parking brake	- T-	П				-		0% DE		□ F□% □ ½	□% □E		□ F□% □ ½	□% □E	
Horn	1	H-	H		-H										
Steering wheel play	7	- H	H			\vdash									
Brakes		 	H		⊢⊢	Щ			Ц						
Body damage		- H -	H			4			Щ						
Under vehicle – Leaks/obstructions			H		-H				Щ						
Reverse warning			H												
Prepared for weather	9		H		H	4									
Overall vehicle cleanliness	7		-		H		1								
Weekly			cceptabl												
Engine oil			Parties -					Deficient					N/A		
Coolant level			-												
Transmission oil level															
Brake fluid level															
Hydraulic oil															
Battery				/						4					
Belts/hoses													2 D		
Miscellaneous vehicle performance															
wiscellaneous verlicle performance															
Trip Planning															
JMP signed by all operators?	Yes			□No											
JMP located on site?	Yes			□No											
Modifications documented and approve	ed? Yes	emi-		□No											
Basic H&S supplies/equipment	☐ First aid le☐ Camera		e extinç adside	guisher warning equi	Reflect	ctive sa e, flag,	afety vest , etc.)	hlight							
If "deficient" is noted (other than fuel), p	please explain	below an	d includ	de what correc	ctive action	was ta	aken and the	date it was	taken						



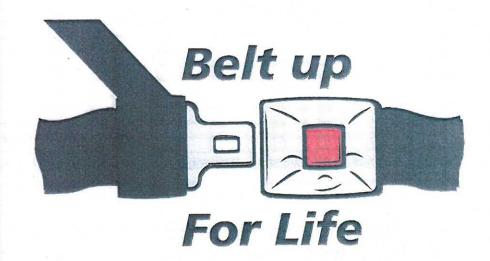
Safety Reminders

- Drive defensively scan road ahead and anticipate actions of other drivers.
- Seat belts must be worn by all passengers at all times.
- Adjust seat / mirrors / headrest / steering wheel and ensure clean windows with no obstructions
- Secure loose items.
- Eliminate distractions mobile phone use is not allowed while driving by ARCADIS policy, and is also forbidden by states, countries, regions.
- Obey all posted traffic signs / signals.
- Maintain safe following distance use "4-second rule."
- Adjust speed / driving habits for adverse road/weather conditions.
- Limit backing up; look behind vehicle for traffic / pedestrians / parked vehicles / objects.
- Watch for pedestrians / cyclists / construction crews.
- Check mirrors frequently; stay out of other drivers' blind spots.
- Use signals prior to turns and lane changes.











Document Control Number:TGM - 2002. 105B

This form documents the ta		HEALTH & SA		NG FORM Personnel who perform work operations on-
site during th	e day are required	I to attend this meeting a	nd to acknowledge th	heir attendance, at least daily.
Project Name:	_		Project Loc	
Date: 19/16 Time: 0134	Conducted		Signature/	Title:
Client:	Client Conta	act:	Subcontrac	ctor companies: N/A
TRACKing the Ta	Igate Meet	ina		
Think through the Tasks (lis				
			ter Sompling	5
2 Decobiliza	tion	3 brand not 4 Egripment	calibration	6
Other Hazardous Active other If yes, describe them It	ties - Check the b party activities tha ere:		ARCADIS, Client or	If there are none, write "None" here:
How will they be control	led?			
Prework Authorization - chissuance or completion of a Not applicable	eck activities to be checklist or similar <u>Doc #</u>	conducted that require before work begins: Working at Height	permit <u>Doc #</u>	Doc #
Energy Isolation (LOTO)	[Excavation/Trenching		Hot Work
Mechanical Lifting Ops		Overhead & Buried Ut	tilities	Other permit
Discuss following que	stions (for some revie	w previous day's post activities).	Check if ves :	Topics from Corp H&S to cover?
Incidents from day before		Lessons learned from	ALEXANDER AND AND AND AND AND ADDRESS OF THE ADDRES	Any Stop Work Interventions yesterday?
Any corrective actions fro	m yesterday?	Will any work deviate	from plan?	If deviations, notify PM & client
JSAs or procedures are a	vailable?	Field teams to "dirty" .	JSAs, as needed?	All equipment checked & OK?
Staff has appropriate PPE	?	Staff knows Emergend	cy Plan (EAP)?	Staff knows gathering points?
Comments:	~	_		
Recognize the hazards (che circle risk level) - Provide an o	verall assessment	e discussed) (Examples of hazards to be encour Motion (i.e., raffic moving	ntered today and brie	Assess the Risks (Low, Medium, High - Ify list them under the hazard category. Mechanical (i.e., augers, motors) (L M H)
Electrical (i.e., utilities, lightning) (Ом н) [Pressure (i.e., gas cylinder	rs.wells) (L MCH)	Environment (i.e., heat, cold, ice) (L MH)
ehemical (i.e., fuel, acid, paint)	(rWH)	Biological (i.e., ticks, poiso	on ivy) (L) M H)	Radiation (i.e., alpha, sun laser) (L M R)
Sound (i.e., machinery, generate	ors) (LMH)	Personal (i.e. alone, night,	not fit) (L M H) [Driving (i.e. car) ATV, boat, dozer) (L M (H)
Continue TRACI	(Process	on Page 2	THE TAX OF STREET	

TAILGATE	HEALTH & SA	AFETY MEETING F	ORI	W - Pg. 2		
Control the hazards (Check all and discuss the HASP, applicable JSAs, and other control proc				And the last territories and the last territories and the	he day): Rev	riew the
STOP WORK AUTHORITY (Must be address Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	Substitution Administrative Hearing Cons Exposure Gui Fall Protection	controls ervation delines		below) Isolation Monitoring Respiratory Pr Decon Proced Work Zones/S Traffic Control Other (specify	ures ite Control	
Signature an	d Certificatio	n Section - Site Sta	ff a	nd Visitors		
The state of the s	any/Signature			Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
				0134		
Marcal Thes Amends M-	19					
Important Information and Numbers	Visitor Name/O	So - not involved in work	- Indiana	will STOP the job a	any time anyone is c	concerned or
All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.			1	incertain about heal nazard or additional project, job or task h	mitigation not recor	
In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In	Out	t	will be alert to any he work site or haza nazard assessments	ards not covered by	
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In	Out		f it is necessary to S FRACK; and then ar HASP as needed.	TOP THE JOB, I w	CONTRACTOR STATE OF THE STATE O
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In	Out	١,	will not assist a su work unless it is abs have done TRACK	olutely necessary a	nd then only after
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In	Out		nazard.	and I have thoroug	thy controlled the
Post Daily Activities Review - Re Lessons learned and best practices learn Incidents that occurred today: Any Stop Work interventions today?		or before next day's work	(Che	eck those appl	icable and ex	plain:)
Corrective/Preventive Actions needed for	future work:	A CONTRACTOR OF THE CONTRACTOR				
Any other H&S issues:						
Keep H&S 1s	it in all thin	ngs	SIA N	WorkCare - 1.80	0.455.6155	



Document Control Number:TGM - 2002

This form documents the t		SAFETY MEETING FORM	
site during	the day are required to attend this mee	nce with the Project HASP. Personnel who perform weting and to acknowledge their attendance, at least d	ork operations on- ailv.
Project Name:	T	Project Location:	
Date: Time:	Conducted by:	Signature/Title:	
Client:	Client Contact:	Subcontractor companies: N/A	
TRACKing the Ta	ilgate Meeting	non-transferring contribution of the	
Think through the Tasks (li	st the tasks for the day):		
1_ mobilization		nota soupling 5	
2 desmoilirat	ion 4 Egrapuer	it calibration 6	
Other Hazardous Active	vities - Check the box if there are any	other ARCADIS, Client or If there are nor	ne, write ne" here:
If yes, describe them	r party activities that may pose hazard here:	s to ARCADIS operations	e nere.
How will they be contro	olled?		
	heck activities to be conducted that re-		
issuance or completion of a	a checklist or similar before work begin	ns: Doc#	Doc#
Not applicable	Doc # Working at Heig	ght Confined Space	
Energy Isolation (LOTO)	Excavation/Tren	nching Hot Work	
Mechanical Lifting Ops	Overhead & Bur	ried Utilities Other permit	
Discuss following qu	estions (for some review previous day's post activ	ivities). Check if yes: Topics from Corp H&S	S to cover?
Incidents from day before	e to review? Lessons learned	d from the day before? Any Stop Work Interve	entions yesterday?
Any corrective actions fr	om yesterday? Will any work de	leviate from plan?	A & client
JSAs or procedures are	available? Field teams to "o	dirty" JSAs, as needed?	
Staff has appropriate PP	E? Staff knows Eme	ergency Plan (EAP)? Staff knows gathering	points?
Comments:	•—		
Recognize the hazards (ch	eck all those that are discussed) (Exar	mples are provided) and Assess the Risks (<u>L</u> ow, <u>M</u>	edium High
circle risk level) - Provide an	overall assessment of hazards to be e	encountered today and briefly list them under the haz	zard category.
Gravity (i.e., ladder, scaffold,	trips) (LM H) Motion (i.e. traffic,	moving water) (L MA) Mechanical (i.e., augers,	motors) (L M H)
Electrical (i.e., utilities, lightni	ng) ((LM H) Pressure (i.e. gas	cylinders, wells) (L M.(H) Environment (i.e., heat, o	
Chemical (i.e., fuel, acid, pair		/	
Sound (i.e., machinery, genera			, dozer) (L M H)
ಲontinue TRAC	K Process on Page 2	2	

TAILGATE	HEALTH & SAFETY MEE	TING FORM	/i - Pg. 2		
Control the hazards (Check all and discuss the HASP, applicable JSAs, and other control proc				he day): Rev	iew the
Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	essed in every Tailgate meeting - (S Substitution Administrative controls Hearing Conservation Exposure Guidelines Fall Protection TIP conducted (specify job/JS	<u> </u>			
	d Certification Section - S	Site Staff a	nd Visitors	Initial & Sign out	I have read and
Manciel Pluses Ancad S	any/Signature MJM		Time 010	Time	understand the HASP
Important Information and Numbers All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.	Visitor Name/Co - not involved	u h	will STOP the job a ncertain about heal azard or additional roject, job or task h	th & safety or if any mitigation not recor	one identifies a
In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In Out	tt	I will be alert to any changes in personnel, condition the work site or hazards not covered by the original hazard assessments.		
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In Out	H T	it is necessary to S RACK; and then ar	TOP THE JOB, I w	
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In Out	W	will not assist a su ork unless it is absoluted the done TRACK	olutely necessary a	nd then only after
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In Out	h	azard.		
Post Daily Activities Review - Re Lessons learned and best practices learn Incidents that occurred today: Any Stop Work interventions today?		ay's work (Che	ck those appl	icable and ex	plain:)
Corrective/Preventive Actions needed for	future work:				
Any other H&S issues:					
Keep H&S 1 ^s	t in all things	1	WorkCare - 1.80	0.455.6155	and the second second



Document Control Number: TGM - E002 1605

	LGATE HEALTH & SAF		
site during the day a	e required to attend this meeting and	the Project HASP. Personnel who perform work operation to acknowledge their attendance, at least daily.	ons on-
Project Name: Puna Te	12/22	Project Location: Catoro AR	
	inducted by:	Signature/Title:	
	ent Contact:	Subcontractor companies: N/A	
TRACKing the Tailgate	Meeting		
Think through the Tasks (list the tas	THE RESERVE OF THE PARTY OF THE		
1 Mobilization		tur soupling 5	
2 Desmobilization	4. Equipmet cal	6 6	
Other Hazardous Activities - C	neck the box if there are any other Al	RCADIS, Client or If there are none, write	Tent Strategy Street
other party ac If yes, describe them here:	tivities that may pose hazards to AR	CADIS operations None" here:	
How will they be controlled?			
Prework Authorization - check activissuance or completion of a checklis	to r similar before work begins:	ormit Doc#	Doc#
	Ooc# Working at Height	Confined Space	
Energy Isolation (LOTO)	Excavation/Trenching	Hot Work	
Mechanical Lifting Ops	Overhead & Buried Utili	ities Other permit	
Discuss following questions	or some review previous day's post activities). C	theck if yes: Topics from Corp H&S to cover?	
Incidents from day before to revie	w? Lessons learned from th	ne day before? Any Stop Work Interventions yest	erday?
Any corrective actions from yester	day? Will any work deviate fr	rom plan? If deviations, notify PM & client	
JSAs or procedures are available	Field teams to "dirty" JS	As, as needed? All equipment checked & OK?	
Staff has appropriate PPE?	Staff knows Emergency	Plan (EAP)? Staff knows gathering points?	
Comments:			
Recognize the hazards (check all the	ose that are discussed) (Examples ar	re provided) and Assess the Risks (<u>L</u> ow, <u>M</u> edium, <u>H</u> igh	
circle risk level) - Provide an overall as	sessment of hazards to be encounted	ered today and briefly list them under the hazard categor	ry.
Gravity (i.e., ladder, scaffold trips) (L	M H) Motion (i.e., traffic, moving wa	ater) (L M H) Mechanical (i.e., augers, motors) (L	м н)
Electrical (i.e., utilities, lightning)	M H) Pressure (i.e., gas cylinders,	(L M H) Environment (i.e. heat, cold, ice) (L	M H)
Chemical (i.e., fuel, acid, paint) (L	M H) Biological (i.e., ticks, poison	ivy) (LM H) Radiation (i.e., alpha sun laser) (L	м 🗐
Sound (i.e., machinery, generators) (L	M H) Personal (i.e. alone, night, no		M(H)
Continue TRACK Pro	ocess on Page 2		

TAILGATE	HEALTH & SAFETY MEETING	FORM	1 - Pg. 2		
Control the hazards (Check all and discuss the HASP, applicable JSAs, and other control proc				he day): Rev	iew the
Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	Substitution Administrative controls Hearing Conservation Exposure Guidelines Fall Protection TIP conducted (specify job/JSA)				
Signature an	d Certification Section - Site S	taff a	nd Visitors		
Name/Compa	any/Signature		Initial & Sign in Time	Initial & Sign out	I have read and understand the
Mandal The Anna	s W-D18		0/90		HASP
Important Information and Numbers All site staff should arrive fit for work. If not, they should	Visitor Name/Co - not involved in wor	u	ncertain about heal	any time anyone is on the & safety or if anyone if anyone if anyone if anyone if anyone it is a safety or if any or if a safety or if a saf	one identifies a
report to the supervisor any restrictions or concerns. In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In Out	pr	roject, job or task h	azard assessment. changes in personnards not covered by	nel, conditions at
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In Out	H T	it is necessary to \$	TOP THE JOB, I wenter the hazard as	
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In Out	w	ork unless it is abs have done TRACK	abcontractor or othe olutely necessary at and I have thoroug	nd then only after
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In Out	h	azard.		
Post Daily Activities Review - Re Lessons learned and best practices learn Incidents that occurred today: Any Stop Work interventions today? Corrective/Preventive Actions needed for	ed today:	ork (Che	ck those appl	icable and ex	plain:)
Any other H&S issues:	t in all things	100000	WorkCare - 1.80	0.455.6155	



Document Control Number: TGM - E002.16058

This form documents t		TE HEALTH & SAFE		G FORM Personnel who perform work open	
site dur	ing the day are requ	red to attend this meeting and t	o acknowledge the	ir attendance, at least daily.	erations on-
	na Term		Project Loca	cataño PR	
Date: / Time 07	e: Conduct	ed by: A.C.	Signature/Tit	tle: M Tac	
Client:	Client Co		Subcontracte	or companies: N/A	
TRACKing the	Tailgate Me	eting			
Think through the Tasl	s (list the tasks for t	he day):			
1 Mobilizat	107	3 Cound water . 4 Equipment cali	Soupling	5	
2 Desmobili	ration	4 Equipment cali	Gation	6	
Other Hazardous	other party activities	e box if there are any other ARC that may pose hazards to ARC	CADIS, Client or ADIS operations	If there are none, write "None" here	
How will they be co					
Prework Authorization issuance or completion	 check activities to of a checklist or sim 	be conducted that require perruilar before work begins:	nit <u>Doc #</u>		Doc #
Not applicable	<u>Doc #</u>	Working at Height		Confined Space	
Energy Isolation (LC	OTO)	Excavation/Trenching		Hot Work	
Mechanical Lifting C	ps	Overhead & Buried Utilitie	es	Other permit	
Discuss following	questions (for some i	eview previous day's post activities). Cho	eck if yes :	Topics from Corp H&S to cov	er?
Incidents from day b	efore to review?	Lessons learned from the	day before?	Any Stop Work Interventions	yesterday?
Any corrective action	ns from yesterday?	Will any work deviate from	m plan?	If deviations, notify PM & clien	nt
JSAs or procedures	are available?	Field teams to "dirty" JSA	_	All equipment checked & OK	
Staff has appropriate		Staff knows Emergency P	_	Staff knows gathering points?	
Comments:					
- Value of the company of the company	and the second of the second o				
circle risk level) - Provide	check all those that an overall assessm	t are discussed) (Examples are lent of hazards to be encounter	provided) and Ass ed today and briefly	sess the Risks (Low, Medium,) vist them under the hazard cat	<u>H</u> igh - egory.
Gravity (i.e., ladder, sca	1	Motion (i.e., traffic, moving water		Mechanical (i.e., augers, motors)	(LMH)
Electrical (i.e., utilities, I	ightning) (LMH)	Pressure (i.e., gas cylinders, w	elis) (L M H)	Environment (i.e., heat, cold, ice)	(L M(H)
Chemical (i.e., fuel, acid	l, paint) (LM 🗐	Biological (i.e., ticks, poison iv)	(L M\(\frac{1}{4}\))	Radiation (i.e., alpha sun, laser)	(L MTH)
Sound (i.e., machinery, g	enerators) (L M H)	Personal (i.e. alone, night, not in Duddy System	it) (LMH)	Driving (i.e. car) ATV, boat, dozer)	(L MA)
Continue TRA	ACK Proces	ss on Page 2		SAS WEST COLOR	

TAILGATE	HEALTH & SAFETY MEETING F	ORM - Pg. 2			
Control the hazards (Check all and discuss the HASP, applicable JSAs, and other control products)			the day): Rev	iew the	
STOP WORK AUTHORITY (Must be address Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	essed in every Tailgate meeting - (See statem Substitution Administrative controls Hearing Conservation Exposure Guidelines Fall Protection TIP conducted (specify job/JSA)	abertational content c			
Signature an	d Certification Section - Site Sta	ff and Visitors			
Name/Compa	any/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP	
Marcial Plans Ancudes	W14P	0/18		HASP	
		-			
Important Information and Numbers All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.	Visitor Name/Co - not involved in work	I will STOP the job any time anyone is concerned of uncertain about health & safety or if anyone identific hazard or additional mitigation not recorded in the sacratic behavior of the sacratic beh			
In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In Out	I will be alert to any	project, job or task hazard assessment. I will be alert to any changes in personnel, conditi the work site or hazards not covered by the original.		
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In Out	If it is necessary to S TRACK; and then ar HASP as needed.	STOP THE JOB, I w	The state of the s	
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In Out	I will not assist a su work unless it is abs	olutely necessary ar	nd then only after	
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In Out	I have done TRACK hazard.	and I have thorough	ny controlled trie	
Post Daily Activities Review - Re	view at end of day or before next day's work	(Check those appl	icable and ex	plain:)	
Lessons learned and best practices learn	ed today:	VIII.			
Incidents that occurred today:					
Any Stop Work interventions today?					
Corrective/Preventive Actions needed for	future work:				
Any other H&S issues:					
Keep H&S 1s	t in all things	WorkCare - 1.80	0.455.6155		



Document Control Number:TGM - E002.1605B 21/12/N

TGM + project number plus date as follows: xxxxxxxxxxxxxxx - dd/mm/year

Project Name: Project Name: Project Location: Project Location: Project Location: Project Location: Bayanon P. 8 Signature/Title: Terminal Date: / 21 / 16 Dizz Conducted by:	This form documents the tai		& SAFETY MEETING FORM lance with the Project HASP. Personnel who perform v	work operations on-
Date: / / Ime: Conducted by: Signature/Title: Texamon P.R	site during th	e day are required to attend this mo	eeting and to acknowledge their attendance, at least d	aily.
Client Contact: Subcontractor companies: N/A	PLACE		Project Location:	P.R
TRACKing the Tailgate Meeting Think through the Tasks (list the tasks for the day): 1	Date: / 16 Time: 0)22	Conducted by:	Signature/Title:	
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Think through the Tasks (list the tasks for the day): Motivization	TRACKing the Tai	Igate Meeting		
Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If yes, describe them here: How will they be controlled? Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins: Not applicable Doc.# Working at Height Confined Space Energy Isolation (LOTO) Excavation/Trenching Hot Work Mechanical Lifting Ops Overhead & Buried Utilities Other permit Discuss following questions (for some review previous day's post activities). Check if yes: Incidents from day before to review? Lessons learned from the day before? Any Stop Work Interventions yesterday? Any corrective actions from yesterday? Will any work deviate from plan? If deviations, notify PM & client JSAs or procedures are available? Field teams to "dirty" JSAs, as needed? Staff knows gathering points? Comments: Secognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder, scaffold/liges) LM H) Motion (i.e., gate cylinders, wells) Check if yes: Topics from Corp H&S to cover? Any Stop Work Interventions yesterday? All equipment checked & OK? Staff knows gathering points? Comments: Secognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder, scaffold/liges) LM H) Pressure (i.e., gate cylinders, wells) LM H) Environment (i.e., alphaneur), laser) LM H) Pressure (i.e., gate cylinders, wells) LM H) Pressore (i.e., ladder, scaffold/liges) LM H) Pressore (i.e., ladder, scaffold/liges) LM H) Pressore (i.e., ladder, s	Think through the Tasks (list	the tasks for the day):		
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other party activities that may pose hazards to ARCADIS operations If yes, describe them here: How will they be controlled? Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins: Not applicable Doc.# Working at Height Confined Space Energy Isolation (LOTO) Excavation/Trenching Mechanical Lifting Ops Overhead & Buried Utilities Other permit Discuss following questions (for some review previous day's post activities). Check if yes: Incidents from day before to review? Lessons learned from the day before? Any Stop Work Interventions yesterday? Any corrective actions from yesterday? Will any work deviate from plan? If deviations, notify PM & client Discuss following activities is the same appropriate PPE? Staff has appropriate PPE? Staff knows Emergency Plan (EAP)? Staff knows gathering points? Comments: Recognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-inder risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder, scaffold/lapps) Will Am H) Pressure (i.e., gateringers, wells) Personal (i.e., lacker, poison ivy) Chemical (i.e., unachinery, generators) (L M H) Pressure (i.e., gateringers, wells) Personal (i.e., alone, night, notfit) Chemical (i.e., machinery, generators) (L M H) Driving (i.e., aphalogyh, laser) (L M H) Privring (i.e., aphalogyh, laser) Chemical (i.e., machinery, generators) Chemical (i.e., machinery, generators) Chemical (i.e., machinery, generators) L M H) Personal (i.e., alone, night, notfit) Driving (i.e., art, ATV, boat, dozer) (L M H) Privring (i.e., art, ATV, boat, dozer) Doc.# Do	2 Vesmobilizati	on 4 Egripa	ent calibration 6	
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issuance or completion of a checklist or similar before work begins: Not applicable Doc # Working at Height Confined Space	How will they be controll	ed?		
Not applicable Doc # Working at Height Confined Space	Prework Authorization - che	eck activities to be conducted that	require permit Doc #	Doc#
Energy Isolation (LOTO)			illis.	<u>Doc #</u>
Mechanical Lifting Ops Overhead & Buried Utilities Other permit Discuss following questions (for some review previous day's post activities). Check if yes: Topics from Corp H&S to cover? Incidents from day before to review? Lessons learned from the day before? Any Stop Work Interventions yesterday? Any corrective actions from yesterday? Will any work deviate from plan? If deviations, notify PM & client JSAs or procedures are available? Field teams to "dirty" JSAs, as needed? All equipment checked & OK? Staff has appropriate PPE? Staff knows Emergency Plan (EAP)? Staff knows gathering points? Comments: Recognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-ircle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder, scaffold (ries) (L. M. H.) Motion (i.e., traffic moving water) (L. M. H.) Mechanical (i.e., augers, motors) (L. M. H.) Electrical (i.e., utilities, lightning) (L. M. H.) Pressure (i.e., gale cylinters wells) (L. M. H.) Environment (i.e., heat) cold, ice) (L. M. H.) Sound (i.e., fuel, acid, paint) (L. M. H.) Personal (i.e., slone, night, not fit) (L. M. H.) Driving (i.e.(as, ATV, boat, dozer) (L. M. H.)	=			-
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Anddy system	Chemical (i.e., fuel, acid, paint)		icks, poison ivy) (LMH) Radiation (i.e., alpha sun	, laser) (LMH)
Continue TRACK Process on Page 2	Sound (i.e., machinery, generate			, dozer) (L M H)
	Continue TRACK	Process on Page	2	

TAILGATE	HEALTH	& SAFETY MEETING	FOR	M - Pg. 2		
Control the hazards (Check all and discuss the HASP, applicable JSAs, and other control proc					he day): Rev	iew the
Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	Substitu Adminis Hearing Exposur Fall Prof	tion trative controls Conservation e Guidelines	ements	s below) Isolation Monitoring Respiratory Pr Decon Proced Work Zones/S Traffic Control Other (specify	ures ite Control	
Signature an	d Certific	ation Section - Site S	taff a	nd Visitors		
Name/Compa	any/Signatu	re		Initial & Sign in Time	Initial & Sign out Time	I have read and understand the
Marcial Planes Aucusdus	M-	048	5.065	0127		HASP
Important Information and Numbers All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns. In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844. In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	in In	out	_	I will STOP the job a uncertain about heal hazard or additional project, job or task h. I will be alert to any the work site or hazard assessments if it is necessary to STRACK; and then an HASP as needed.	th & safety or if any mitigation not recor azard assessment. changes in personr ards not covered by 5.	one identifies a ded in the site, nel, conditions at the original
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at	In In	Out	_	I will not assist a su work unless it is abs I have done TRACK hazard.	olutely necessary a	nd then only afte
1.720.344.3500						
Post Daily Activities Review - Re Lessons learned and best practices learn Incidents that occurred today: Any Stop Work interventions today? Corrective/Preventive Actions needed for Any other H&S issues:	ned today:		k (Che	eck those appl	icable and ex	plain:)



Document Control Number:TGM - 5002, 6058

TGM + project number plus date as follows: xxxxxxxxxxxxxxxx - dd/mm/year

		E HEALTH & S			ING FORM P. Personnel who perform work ope	
site during the o	lay are requir	ed to attend this meetin	g and to ack	nowledge	their attendance, at least daily.	erations on-
Project Name: Project Name:	color		Name and Address of the Owner, where the Party of the Owner, where the Party of the Owner, where the Owner, which the Owner,	Project Lo		
Date: Time: 0/19	Conducte	d by, colon		Signature	e/Title: M Tec	
Client:	Client Cor	ntact:		Subcontra	actor companies: N/A	
TRACKing the Tailo	ate Mee	eting		uza izan ke		
Think through the Tasks (list th	e tasks for th					
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	The state of the s					
	ty activities the	box if there are any oth hat may pose hazards to				
If yes, describe them here	e:					
How will they be controlled	?					
Prework Authorization - check issuance or completion of a che	activities to	be conducted that requi	ire permit	Doc#		Doc #
Not applicable	Doc #	Working at Height			Confined Space	
Energy Isolation (LOTO)		Excavation/Trench	ning _		Hot Work	
Mechanical Lifting Ops	7-1	Overhead & Buried	d Utilities _		Other permit	
Discuss following question	ONS (for some re-	view previous day's post activitie	es). Check if	yes :	Topics from Corp H&S to cov	er?
Incidents from day before to	review?	Lessons learned fr	om the day b	efore?	Any Stop Work Interventions	yesterday?
Any corrective actions from y	esterday?	Will any work devi	iate from plan	1?	If deviations, notify PM & clien	nt
JSAs or procedures are avai	lable?	Field teams to "dirt	ty" JSAs, as r	needed?	All equipment checked & OK	?
Staff has appropriate PPE?		Staff knows Emerg	ency Plan (E	AP)?	Staff knows gathering points?	
Comments:						
Recognize the hazards (check	all those that	are discussed) (Examp	les are provid	ded) and	Assess the Risks (Low, Medium,	<u>H</u> igh -
		-/			iefly list them under the hazard cat	egory.
Gravity (i.e., ladder, scaffold trips)	(LMH)	Motion (i.e., traffic, mo	ving water) (LMA	Mechanical (i.e., augers, motors)	(LMH)
Electrical (i.e., utilities, lightning)	(См н)	Pressure (i.e., gas cyl	inders, wells) (L MOH)	Environment (i.e. heat cold, ice)	(L M H)
Chemical (i.e., fuel, acid, paint)	(LMH)	Biological (i.e., ticks, p	poison ivy) (L M H)	Radiation (i.e., alpha, sun laser)	(L M H)
Sound (i.e., machinery, generators)	(L M H)	Personal (i.e. alone, ni	ight, not fit) (LME	Driving (i.e. car, ATV, boat, dozer)	(L M)
Continue TRACK	Proces	s on Page 2			Zayarayan k	

TAILGATE	HEALTH &	SAFETY MEETING	G FORM	1 - Pg. 2		
ontrol the hazards (Check all and discuss the HASP, applicable JSAs, and other control proc	ose methods to	control the hazards that	will be imp	olemented for t	he day): Rev	iew the
STOP WORK AUTHORITY (Must be address Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	Substitutio Administra Hearing Co Exposure (Tailgate meeting - (See st n tive controls onservation Guidelines	ratements		ures ite Control	
Signature an	d Certificat	tion Section - Site	Staff a	nd Visitors		
Name/Compa	any/Signature	10		Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Marcial Block Areads	W-V	#		0117		
Important Information and Numbers All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.	Visitor Nam	e/Co - not involved in w	h.	ncertain about heal azard or additional roject, job or task h		one identifies a ded in the site,
In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In	0.4	th		changes in personr ards not covered by s.	
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	ın	Out	Т Т		TOP THE JOB, I we mend the hazard as	
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In	Out	W	ork unless it is abs	ubcontractor or othe olutely necessary a and I have thoroug	nd then only after
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In	Out		azard.	and mave and day	my consciled the
Post Daily Activities Review - Re Lessons learned and best practices learn Incidents that occurred today: Any Stop Work interventions today? Corrective/Preventive Actions needed for Any other H&S issues:	ed today:	day or before next day's w	work (Che	ck those appl	licable and ex	plain:)



Document Control Number:TGM - <u>E002.16058</u> 29/12/TGM + project number plus date as follows: xxxxxxxxxxxxxxxxxx - dd/mm/year

Electrical (i.e., utilities, lightning) (L M H) Pressure (i.e., gas cylinders, wells) (L M H) Environment (i.e., heat, cold, ice) (L M H) Chemical (i.e., fuel, acid, paint) (L M H) Biological (i.e., ticks, poison ivy) (L M H) Radiation (i.e., alpha, sun, laser) (L M H)	This form documents		TE HEALTH & SA			
Project Name: Project Location: Project	site di	uring the day are requ	ired to attend this meeting	and to acknowledge the	eir attendance, at least daily.	erations on-
Conducted by: Conducted by: Signature/Title: Collent Contact: Subcontractor companies: N/A	Project Name:	-		THE RESERVE OF THE PARTY OF THE	ation:	
Client Contact: Subcontractor companies: N/A TRACKing the Tailgate Meeting Think through the Tasks (list the tasks for the day): 1		ne: Conduct	ed by: A.	Signature/T		
Think through the Tasks (list the tasks for the day): Modern Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write other party activities that may pose hazards to ARCADIS operations If there are none, write other party activities that may pose hazards to ARCADIS operations If there are none, write other here:	Client:	Client Co		Subcontrac	tor companies: N/A	
2	TRACKing the	e Tailgate Me	eting			
2	Think through the Ta	sks (list the tasks for	he day):			
Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If yes, describe them here: How will they be controlled? Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins: Not applicable Doc.#				ter sompley	5	
other party activities that may pose hazards to ARCADIS operations If yes, describe them here: How will they be controlled? Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins: Not applicable Doc.# Working at Height Energy Isolation (LOTO) Excavation/Trenching Hot Work Other permit Discuss following questions (for some review previous day's post activities). Check if yes: Incidents from day before to review? Lessons learned from the day before? Any Stop Work Interventions yesterday? Any corrective actions from yesterday? Will any work deviate from plan? If deviations, notify PM & client Staff has appropriate PPE? Staff knows Emergency Plan (EAP)? Staff knows gathering points? Comments: Recognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder scaffold, tips) (L. M. H.) Pressure (i.e., size, opison key) Chemical (i.e., fuel, acid, paint) (L. M. H.) Pressure (i.e., size, opison key) Chemical (i.e., fuel, acid, paint) (L. M. H.) Personal (i.e., slopts, not fit) Personal (i.e., slopts, not fit) (L. M. H.) Driving (i.e.can, ATV, bost, dozer) (L. M. H.)	2 Dezmobil	Ization	4 Equipment co	alibration	6	
Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins: Not applicable	- drive the state of the state of	other party activities				
issuance or completion of a checklist or similar before work begins: Not applicable	How will they be	controlled?				
issuance or completion of a checklist or similar before work begins: Not applicable	Prework Authorization	on - check activities to	be conducted that require	e permit		E-POTS NO.
Energy Isolation (LOTO) Excavation/Trenching Hot Work Mechanical Lifting Ops Overhead & Buried Utilities Other permit Discuss following questions (for some review previous day's post activities). Check if yes: Incidents from day before to review? Lessons learned from the day before? Any Stop Work Interventions yesterday? Any corrective actions from yesterday? Will any work deviate from plan? If deviations, notify PM & client JSAs or procedures are available? Field teams to "dirty" JSAs, as needed? All equipment checked & OK? Staff has appropriate PPE? Staff knows Emergency Plan (EAP)? Staff knows gathering points? Comments: Recognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder scaffold, trips) (L M H) Motion (i.e., traffic, moving water) Chemical (i.e., utilities, lightning) (L M H) Pressure (i.e., geocylinders wells) Chemical (i.e., diel, acid, paint) (L M H) Pressure (i.e., geocylinders wells) Chemical (i.e., diel, acid, paint) (L M H) Pressure (i.e., poison ivy) Chemical (i.e., diel, acid, paint) (L M H) Pressure (i.e., diel, acide, night, not fit) Chemical (i.e., alpha, fun laser) (L M H) Priving (i.e.gan, ATV, boat, dozer) (L M H)	issuance or completion	on of a checklist or sin	nilar before work begins:	Doc #	_	Doc#
Mechanical Lifting Ops Overhead & Buried Utilities Other permit Discuss following questions (for some review previous day's post activities). Check if yes: Incidents from day before to review? Lessons learned from the day before? Any Stop Work Interventions yesterday? Any corrective actions from yesterday? Will any work deviate from plan? If deviations, notify PM & client JSAs or procedures are available? Field teams to "dirty" JSAs, as needed? All equipment checked & OK? Staff has appropriate PPE? Staff knows Emergency Plan (EAP)? Staff knows gathering points? Comments: Recognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder scaffold, tips) (L M H) Motion (i.e., traffic, moving water) (L M H) Mechanical (i.e., augers, motors) (L M H) Electrical (i.e., utilities, lightning) (L M H) Pressure (i.e., ges_cylinders wells) (L M H) Chemical (i.e., fuel, acid, paint) (L M H) Sound (i.e., machinery, generators) (L M H) Personal (i.e., ticks, poison ivy) (L M H) Driving (i.e.can, ATV, boat, dozer) (L M H)			=		=	
Discuss following questions (for some review previous day's post activities). Check if yes: Topics from Corp H&S to cover? Incidents from day before to review?	=	-	_ Excavation/Trenchin	g[Hot Work	
Incidents from day before to review? Lessons learned from the day before? Any Stop Work Interventions yesterday? Any corrective actions from yesterday? Will any work deviate from plan? If deviations, notify PM & client JSAs or procedures are available? Field teams to "dirty" JSAs, as needed? All equipment checked & OK? Staff has appropriate PPE? Staff knows Emergency Plan (EAP)? Staff knows gathering points? Comments: Recognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder scaffold, trips) (L M H) Motion (i.e., traffic, moving water) (L M H) Mechanical (i.e., augers, motors) (L M H) Electrical (i.e., tutilities, lightning) (L M H) Pressure (i.e., gas cylinders wells) (L M H) Chemical (i.e., fuel, acid, paint) (L M H) Biological (i.e., ticks, poison ivy) (L M H) Sound (i.e., machinery, generators) (L M H) Personal (i.e., alone, night, not fit) (L M H) Driving (i.e. alpha, fun hazer) (L M H)	Mechanical Lifting	Ops	Overhead & Buried U	Utilities	Other permit	
Any corrective actions from yesterday? Will any work deviate from plan? If deviations, notify PM & client	Discuss following	ng questions (for some	review previous day's post activities).	. Check if yes :	Topics from Corp H&S to cove	er?
Any corrective actions from yesterday? Will any work deviate from plan? If deviations, notify PM & client SAS or procedures are available? Field teams to "dirty" JSAs, as needed? Staff knows gathering points? Staff knows gathering points? Comments: Recognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder scaffold, trips) (L M H) Motion (i.e. traffic, moving water) (L M H) Pressure (i.e., ges cylinders wells) (L M H) Fradiation (i.e., alpha, sun laser) (L M H) Sound (i.e., fuel, acid, paint) (L M H) Personal (i.e. alone, night, not fit) (L M H) Driving (i.e. at ATV, boat, dozer) (L M H)	Incidents from day	before to review?	Lessons learned from	m the day before?	Any Stop Work Interventions	vesterday?
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Staff has appropriate PPE? Comments: Recognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder scaffold, trips) (L M H) Motion (i.e., traffic, moving water) (L M H) Mechanical (i.e., augers, motors) (L M H) Electrical (i.e., utilities, lightning) (L M H) Pressure (i.e., gas cylinders wells) (L M H) Chemical (i.e., fuel, acid, paint) (L M H) Biological (i.e., ticks, poison ivy) (L M H) Sound (i.e., machinery, generators) (L M H) Personal (i.e. alone, night, not fit) (L M H) Driving (i.e.car, ATV, boat, dozer) (L M H)	JSAs or procedure	s are available?	Field teams to "dirty"	JSAs, as needed?		
Comments: Recognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High-circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., laddet scaffold, trips) (L M H) Motion (i.e., traffic, moving water) (L M H) Mechanical (i.e., augers, motors) (L M H) Electrical (i.e., utilities, lightning) (L M H) Pressure (i.e., gas cylinders, wells) (L M H) Chemical (i.e., fuel, acid, paint) (L M H) Biological (i.e., ticks, poison ivy) (L M H) Sound (i.e., machinery, generators) (L M H) Personal (i.e. alone, night, not fit) (L M H) Driving (i.e.car, ATV, boat, dozer) (L M H)	Staff has appropria	ite PPE?		<u> </u>		
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Chemical (i.e., fuel, acid, paint) (L M H) Biological (i.e., ticks, poison ivy) (L M H) Radiation (i.e., alpha, sun, laser) (L M H) Sound (i.e., machinery, generators) (L M H) Personal (i.e. alone, night, not fit) (L M H) Driving (i.e. can, ATV, boat, dozer) (L M H)						(L M H)
Sound (i.e., machinery, generators) (L M H) Personal (i.e. alone, night, not fit) (L M H) Driving (i.e. can ATV, boat, dozer) (L M H)		lightning) (L M 🗐	Pressure (i.e., gas cylind	ders, wells) (L M H)	Environment (i.e., heat, cold, ice)	(LMH)
Buddy Syster		cid, paint) (L M H)		ison ivy) (L M (f)	Radiation (i.e., alpha, (un, laser)	(LMH)
Continue TRACK Process on Page 2	Sound (i.e., machinery,	generators) (L M H)	Personal (i.e. alone, nigh	nt, not fit) (L M H)	Driving (i.e.car, ATV, boat, dozer)	(L MH)
	ontinue TR	ACK Proces	ss on Page 2			

TAILGATE	HEALTH & SAFETY	MEETING FOR	RM - Pg. 2		
Atrol the hazards (Check all and discuss the HASP, applicable JSAs, and other control proc	ose methods to control the esses. Discuss and docum	hazards that will be i ent any additional co	mplemented for to	he day): Rev	iew the
STOP WORK AUTHORITY (Must be address Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	Substitution Administrative controls Hearing Conservation Exposure Guidelines Fall Protection TIP conducted (specify		Isolation Isolation Monitoring Respiratory Pr Decon Proced Work Zones/S Traffic Control Other (specify	ures ite Control	/ 3
Signature an	d Certification Secti	ion - Site Staff	and Visitors		
	any/Signature		Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Mancial Plines Anua	bs Uff	18	0347		
				<u> </u>	
Important Information and Numbers	Visitor Name/Co - not in	wolved in work	I will STOP the job a	any time anyone is a	concerned or
All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.	TISKOT NAMEJOO - HOCH	Work	uncertain about heal hazard or additional project, job or task h	th & safety or if any mitigation not recor	one identifies a
In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In Out		I will be alert to any the work site or haza hazard assessments	changes in personr	
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In Out		If it is necessary to S TRACK; and then ar HASP as needed.	the second secon	The state of the s
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In Out		I will not assist a su work unless it is abs I have done TRACK	olutely necessary a	nd then only afte
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In Out		hazard.	and mave thoroug	my controlled the
Post Daily Activities Review - Re	view at end of day or before	next day's work (C	heck those appl	icable and ex	plain:)
Lessons learned and best practices learn	ed today:				
Incidents that occurred today:					
Any Stop Work interventions today?					
Competitive / Description Autisms and addition	future work:				
Corrective/Preventive Actions needed for					



Document Control Number:TGM - E002. 1605 B -03/01/11

TGM + project number plus date as follows: xxxxxxxxxxxxxxxxx - dd/mm/year

This form docur				H & SAFET		NG FORM P. Personnel who perform	work operati	ions on-
S	ite during the da	ay are requir	ed to attend this	s meeting and to	acknowledge	their attendance, at least	daily.	10110 011
Project Name:	Pura	Termin	a)		Project L	ocation:	P-R	
Date: /03/11	Time:	Conducte	d by: A		Signature			
Client:		Client Cor	ntact:		Subcontr	actor companies: N/A		
TRACKing	the Tailg	ate Mee	ting					J. J. J.
Think through th							AND RESIDENCE OF STREET	
1 mobilis	eation		3 Arour	nd moter be	pailan	5		
2 Ocemol	ilization		4 Equip	nd moter Scrent Collibra	ntion	6		
If yes, des	other part cribe them here	y activities t		e any other ARCA azards to ARCAL			none, write one" here:	
How will the	y be controlled?							
Prework Author issuance or com				nat require permit begins:	Doc#			Doc#
Not applicable	9	Doc#	Working a	t Height		Confined Space	_	
Energy Isolati	on (LOTO)		Excavation	/Trenching		Hot Work		
Mechanical Li	fting Ops		Overhead	& Buried Utilities		Other permit		
Discuss fol	lowing questio	NS (for some re	view previous day's p	ost activities). Chec	k if yes :	Topics from Corp H	&S to cover?	
Incidents from	day before to r	eview?	Lessons le	arned from the d	ay before?	Any Stop Work Inte	rventions yes	sterday?
Any corrective	actions from ye	esterday?	Will any w	ork deviate from	plan?	If deviations, notify	PM & client	
JSAs or proce	dures are availa	able?	Field team	s to "dirty" JSAs,	as needed?	All equipment check		
Staff has appr	opriate PPE?		Staff know	s Emergency Pla	n (EAP)?	Staff knows gathering	ng points?	
Comments								
Recognize the h	azards (check a	II those that	are discussed)	(Examples are p	rovided) and	Assess the Risks (Low,	Medium, High	h -
circle risk level) - F	Provide an overa	_	ent of hazards to	be encountered	today and br	iefly list them under the h	azard catego	ry.
Gravity (i.e., lad	der, scaffold, trips)	(LMH)	Motion (i.e.,	traffic, moving water)	(LMH)	Mechanical (i.e., auge	rs, motors) (L	_ M H)
Electrical (i.e., t	utilities, lightning)	(L) M H)	Pressure (i.	e., gas cylinders, wells) (LM) H)	Environment (i.e., hea	t cold, ice) (L	- MH
Chemical (i.e.,	fuel, acid, paint)	(L M H)	Biological (i.e., ticks, poison ivy)	(L M A)	Radiation (i.e., alpha, s	un, laser) (L	- M(H)
Sound (i.e., mac	hinery, generators)	(L M H)	Personal (i.	e. alone, night, not fit)	(L M A)	Driving (i.e.car, ATV, bo	oat, dozer) (L	MA)
 continue	TRACK	Proces	s on Pag	ge 2	No in	- Karakara		

TAILGATE	HEALTH	& SAFETY MEETING	FOR	VI - Pg. 2		Control of the Contro
ontrol the hazards (Check all and discuss the HASP, applicable JSAs, and other control proc					he day): Rev	iew the
STOP WORK AUTHORITY (Must be address Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	essed in eve Substitu Adminis Hearing Exposu	ry Tailgate meeting - (See state tion trative controls Conservation re Guidelines	ements		ures ite Control	
Signature an	d Certific	ation Section - Site S	taff a	nd Visitors		
Name/Compa	any/Signatu	re		Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
				0115		
Marial aloos Ancord	es U	-078				
	,		-			
was designed and the second and the						
					<u> </u>	<u></u>
Important Information and Numbers All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.	Visitor Na	me/Co - not involved in worl	u h	will STOP the job a incertain about heal nazard or additional project, job or task h	th & safety or if any mitigation not recor	one identifies a
In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In	Out	I t	will be alert to any he work site or haza	changes in personnards not covered by	
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In	Out	H	f it is necessary to \$ FRACK; and then as	TOP THE JOB, I w	
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In	Out	I V	will not assist a su work unless it is abs	olutely necessary a	nd then only afte
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In	Out		have done TRACK nazard.	and I have thoroug	niy controlled the
Post Daily Activities Review - Re	eview at end	of day or before next day's wor	k (Che	eck those appl	icable and ex	plain:)
Lessons learned and best practices learn	ed today:					
Incidents that occurred today:			WI			
Any Stop Work interventions today?						
Corrective/Preventive Actions needed for	future work:					
Any other H&S issues:						
Keep H&S 1 ^s	it in all	things	GREAT TO A STATE OF THE STATE O	WorkCare - 1.80	0.455.6155	



Document Control Number:TGM = E002.1605 B

TGM + project number plus date as follows: xxxxxxxxxxxxxxxxx - dd/mm/year

This form documents the ta		SAFETY MEETING FORM
site during th	ne day are required to attend this med	nce with the Project HASP. Personnel who perform work operations or eting and to acknowledge their attendance, at least daily.
Project Name:		Project Location: Bayano PB
Date: / / / Time;	Conducted by:	
Client:	Client Contact:	Subcontractor companies: N/A
TRACKing the Ta	ilgate Meeting	
Think through the Tasks (lis		Mark that was a state of the property of the second state of the s
1 Mobiliza tio	3 envorent	calibration 5
2 Desmobilization	3 egypnent on 4 ground	voter sompling 6
Other Hazardous Activ	ties - Check the box if there are any party activities that may pose hazard ere:	other ARCADIS, Client or If there are none, write
Prework Authorization - ch	eck activities to be conducted that re	Quire permit
issuance or completion of a	checklist or similar before work begin	s: <u>Doc #</u>
Not applicable Energy Isolation (LOTO)	Doc # Working at Heig	
Mechanical Lifting Ops	Excavation/Trer	·
	Overhead & Bui	ied Utilities Other permit
Discuss following que	stions (for some review previous day's post acti	vities). Check if yes : Topics from Corp H&S to cover?
Incidents from day before	to review? Lessons learned	from the day before? Any Stop Work Interventions yesterday
Any corrective actions from	m yesterday? Will any work d	eviate from plan?
SAs or procedures are a	vailable? Field teams to "o	dirty" JSAs, as needed? All equipment checked & OK?
Staff has appropriate PPE	? Staff knows Eme	ergency Plan (EAP)? Staff knows gathering points?
Comments:		
Recognize the hazards (che	ck all those that are discussed) (Exar	nples are provided) and Assess the Risks (Low, Medium, High -
arcie risk level) - Provide an o	verall assessment of hazards to be e	incountered today and briefly list them under the hazard category.
Gravity (i.e., ladder, scaffold, tri	os) (L M H) Motion (i.e., traffic)	moving water) (L M H) Mechanical (i.e., augers, motors) (L M H)
Electrical (i.e., utilities, lightning) (LMH) Pressure (i.e., gas	cylinders, wells) (L M H) Environment (i.e., heat, cold, ice) (L M H)
Chemical (i.e., fuel, acid, paint)	(L M H) Biological (i.e., tick	s, poison ivy) (L M(H) Radiation (i.e., alpha, sun, laser) (L M(H)
Sound (i.e., machinery, generate	Personal (i.e. alone	e, night, not fit) (L M (H) Driving (i.e. car, ATV, boat, dozer) (L M H)
Continue TRACE	(Process on Page 2	2

s to control the hazards that will cuss and document any additionary Tailgate meeting - (See state) strative controls Conservation Conservation Conservation	il control processes.		iew the
ation strative controls Conservation re Guidelines	Isolation Monitoring Respiratory Pr	otection	
tection ducted (specify job/JSA)	Work Zones/S Traffic Control	ite Control	
cation Section - Site St	aff and Visitors		
re de la	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
W-D79	3725		naor
ame/Co - not involved in work Out	uncertain about heal hazard or additional project, job or task h I will be alert to any the work site or haza	Ith & safety or if any mitigation not recor azard assessment. changes in personr ards not covered by	one identifies a ded in the site, nel, conditions at
Out	TRACK; and then a		
Out	I will not assist a s work unless it is abs	solutely necessary a	nd then only after
Out	hazard.	and I have thoroug	nny controller are
	cation Section - Site State WATH ame/Co - not involved in work Out Out Out	ame/Co - not involved in work Out Out I will STOP the job auncertain about heal hazard or additional project, job or task he work site or hazard assessments. Out I will be alert to any the work site or hazard assessments. If it is necessary to STRACK; and then a HASP as needed. I will not assist a swork unless it is abs I have done TRACK hazard.	Other (specify) Initial & Sign in Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initial & Sign in Initial & Sign out Time Initi



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	TAILGAT	TE HEALTH & SAFET	Y MEETI	ING FORM	
This form documents the tail	gate meeting of	onducted in accordance with the	Project HASE	P Personnel who perform work and	erations on-
Project Name:	day are requir	ed to attend this meeting and to	Project Lo	their attendance, at least daily.	
Date: / / Time:	Conducte			Boyann Pip	
01/05/11 01/8 Client:		14. Colon	Signature	Im lec	
	Client Co		Subcontra	actor companies: N/A	
TRACKing the Tai	lgate Mee	eting			
Think through the Tasks (list	the tasks for th	e day):			
1 mobilization		3 ground unter	sampling	5	
2 desmobilization	2	4 Egriphenta 1	alibrato	on 6	
Other Hazardous Activit	ies - Check the	box if there are any other ARCA	DIS, Client or	If there are none, write	
other p If yes, describe them he	arty activities t	hat may pose hazards to ARCAD	IS operations	"None" here	
How will they be controlled	ed?				
Prework Authorization - che issuance or completion of a c	ck activities to	be conducted that require permit	Doc#		Doc#
Not applicable	Doc #	Working at Height		Confined Space	
Energy Isolation (LOTO)		Excavation/Trenching		Hot Work	
Mechanical Lifting Ops		Overhead & Buried Utilities		Other permit	*
Discuss following gues	tions #	view previous day's post activities). Chec		Tonico from Com USC to con	
Incidents from day before t				Topics from Corp H&S to cov	
		Lessons learned from the da		Any Stop Work Interventions	
Any corrective actions from		Will any work deviate from	plan?	If deviations, notify PM & clier	tourner of
JSAs or procedures are av		Field teams to "dirty" JSAs,	as needed?	All equipment checked & OK?	ALL IT LES
Staff has appropriate PPE?	?	Staff knows Emergency Plan	n (EAP)?	Staff knows gathering points?	
Comments:	·				
Recognize the hazards (chec	k all those that	are discussed) (Examples are pr	ovided) and	ssess the Risks (Low, Medium, I	liah -
circle risk level) - Provide an ov	erall assessme	ent of hazards to be encountered	today and bri	efly list them under the hazard cate	egory.
Gravity (i.e., ladder, scaffold, trip	(LMH)	Motion (i.e., traffic, moving water)	(L M A)	Mechanical (i.e., augers, motors)	(LMH)
Electrical (i.e., utilities, lightning)	(L M H)	Pressure (i.e., gas cylinders, wells	(L MH)	DEpuironment ()	() (1)
pano	(= 0)	Troodero (i.e., gas cynthers, wells	(Environment (i.e., heat, cold, ice)	(LM/H)
Chemical (i.e., fuel, acid, paint)	(LM(H)	Biological (i.e., ticks, poison ivy)	(LMH)	Radiation (i.e., alpha, sun laser)	(L M/H)
Voc		insect		7	10
Sound (i.e., machinery, generator	s) (LMH)	Personal (i.e. alone, night, not fit)	(L MA)	Driving (i.e. can ATV, boat, dozer)	(L M(A)
Continue TRACK	Proces	s on Page 2			

TAILGATE	HEALTH & SAFETY MEETING F	OKIVI - Pg. Z			
Control the hazards (Check all and discuss the HASP, applicable JSAs, and other control process.)	ose methods to control the hazards that will esses. Discuss and document any additional	be implemented for all control processes.	the day): Rev	iew the	
Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	Substitution Administrative controls Hearing Conservation Exposure Guidelines Fall Protection TIP conducted (specify job/JSA)				
Signature and	d Certification Section - Site Sta	aff and Visitors			
Constitution of the Consti	any/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP	
Marcial Hors Ancus	s WIII	0718			
Important Information and Numbers All site staff should arrive fit for work. If not, they should	Visitor Name/Co - not involved in work	I will STOP the job uncertain about hea hazard or additional	Ith & safety or if any mitigation not recor	one identifies a rded in the site,	
In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In Out	I will be alert to any the work site or haz	changes in personi ards not covered by	nel, conditions at	
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In Out	If it is necessary to TRACK; and then a HASP as needed.	STOP THE JOB, I v		
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In Out	work unless it is ab	I will not assist a subcontractor or other party with the work unless it is absolutely necessary and then only I have done TRACK and I have thoroughly controlled.		
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In Out	hazard.	Cana Thave allowag	ymy centrolled the	
Post Daily Activities Review - Re Lessons learned and best practices learn Incidents that occurred today: Any Stop Work interventions today? Corrective/Preventive Actions needed for	ned today:	(Check those app	licable and ex	cplain:)	
Corrective/Preventive Actions needed for					



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Project Name:	_	lows	Project Loca	0 ()	
Date:	The second secon	cted by:	Signature/Tit	tle: UM +	
Client:		Contact:	Subcontract	or companies: N/A	
TRACKing the	Tailgate Me	eeting			
hink through the Tas					F71-10-3-16
1 Mobilizati		3 realte 2	g alredebt depres	5	
2 Dezmobili	eatin	4		6	
Other Hazardous	other party activitie	the box if there are any otl s that may pose hazards t	ner ARCADIS, Client or o ARCADIS operations	If there are none, write "None" here	
How will they be	controlled?				
Prework Authorization	n - check activities	to be conducted that requimilar before work begins:	ire permit Doc#		Doc #
Not applicable	Doc #	HOTSPENDENNEN HER HER HESTERNAND STATE		Confined Space	
Energy Isolation (L	ОТО)	Excavation/Trench	ning	Hot Work	
Mechanical Lifting	Ops	Overhead & Buried	d Utilities	Other permit	
Discuss following	g questions (for som	e review previous day's post activitie	es). Check if yes :	Topics from Corp H&S to cov	er?
Incidents from day			rom the day before?	Any Stop Work Interventions	yesterday?
Any corrective action	ns from yesterday?	Will any work devi	iate from plan?	If deviations, notify PM & clie	
JSAs or procedures	are available?	Field teams to "dirt	ty" JSAs, as needed?	All equipment checked & OK	
Staff has appropria	e PPE?	Staff knows Emerg		Staff knows gathering points?	
Comments:]	
	s (check all those th	nat are discussed) (Evamo	les are provided) and Acc	sess the Risks (<u>L</u> ow, <u>M</u> edium, <u>I</u>	10-16-27-27
rcle risk level) - Provid	e an overall assess	ment of hazards to be end	countered today and briefly	list them under the hazard cat	egory.
Gravity (i.e., ladder, sca	affold trips) (L M 中	Motion (i.e., traffic, mo	ving water) (L M (H)	Mechanical (i.e., augers, motors)	(L M H)
Electrical (i.e., utilities,	lightning) (L M H) Pressure (i.e., gas cyl	inders, wells) (L M H)	Environment (i.e., heat cold, ice)	(L M (H)
		Distoriación de la	(1 14 0)		(L_M (H)
Chemical (i.e., fuel, aci	d, paint) (LMH	Biological (i.e., ticks, p	poison ivy) (L M A)	Radiation (i.e., alpha, sun, laser)	1-

TAILGATE I	HEALTH & SAFETY MEETING FO	RM - Pg. 2
Control the hazards (Check all and discuss the HASP, applicable JSAs, and other control process.)	ose methods to control the hazards that will be esses. Discuss and document any additional	e implemented for the day): Review the control processes.
STOP WORK AUTHORITY (Must be address Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	Substitution Administrative controls Hearing Conservation Exposure Guidelines Fall Protection TIP conducted (specify job/JSA)	Isolation Isolation Monitoring Respiratory Protection Decon Procedures Work Zones/Site Control Traffic Control Other (specify)
Signature an	d Certification Section - Site State	f and Visitors
Name/Compa	any/Signature	Initial & Sign in Time Initial & Sign out Understand the HASP
March Plons Ancido	MIT	0740
		4
Important Information and Numbers	Visitor Name/Co - not involved in work	I will STOP the job any time anyone is concerned or
All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.	The control of the co	uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.
In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In Out	I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In Out	If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify		I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after
the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In Out	I have done TRACK and I have thoroughly controlled the hazard.
Post Daily Activities Review - Re Lessons learned and best practices learn Incidents that occurred today: Any Stop Work interventions today? Corrective/Preventive Actions needed for		Check those applicable and explain:)
Any other H&S issues:	Tutal o Work.	
	it in all things	WorkCare - 1.800.455.6155



Document Control Number:TGM - E002 . (605) - 11/01 TGM + project number plus date as follows: xxxxxxxxxxxxxxxxx - dd/mm/year

This form documents the to	TAILGATE	HEALTH & SA	FETY MEE	TING FORM	
Site during th	ilgate meeting con le day are required	ducted in accordance was to attend this meeting	vith the Project Ha and to acknowled	ASP. Personnel who perform work opedge their attendance, at least daily.	erations on-
Project Name:	A Tana	-0-1		t Location: Boyours P.B	
Date: / / / Time:	Conducted	by:	Signat	ure/Title:	
Client:	Client Conta	act:	Subco	ntractor companies: N/A	
TRACKing the Tai	Igate Meet	ing			
Think through the Tasks (lis					1 1 1 1 1 1 1 1
			ater sompl	5	
2 Dezmobiliza	tion	3 ground ve	calibration	6	
Other Hazardous Activi				The state of the s	
other	party activities tha	t may pose hazards to	ARCADIS operati	ons None" here:	
If yes, describe them h					
How will they be control	led?				
Prework Authorization - ch issuance or completion of a	eck activities to be	conducted that require	permit Doc :	#	Doc#
Not applicable	Doc #	Working at Height		Confined Space	
Energy Isolation (LOTO)	[Excavation/Trenching	g	Hot Work	
Mechanical Lifting Ops	[Overhead & Buried U	Jtilities	Other permit	
Discuss following que	stions (for some review	w previous day's post activities).	Check if yes :	Topics from Corp H&S to cove	er?
Incidents from day before		Lessons learned from			
Any corrective actions from	n yesterday?	─ Will any work deviate	•	If deviations, notify PM & clien	-
JSAs or procedures are a	vailable?	Field teams to "dirty"			
Staff has appropriate PPE	_	Staff knows Emergen	-28 20 20 20 20 20	Staff knows gathering points?	
Comments:	•		ioy i idii (Erii).		
circle risk level) - Provide an o	ck all those that are verall assessment	e discussed) (Examples of hazards to be encou	are provided) and intered today and	nd Assess the Risks (<u>L</u> ow, <u>M</u> edium, <u>H</u> briefly list them under the hazard cate	ligh -
Gravity (i.e., ladder, scaffold, trip		Motion (i.e., traffic, moving			(L M H)
Electrical (i.e., utilities, lightning) (Dм н) [Pressure (i.e., gas cylinde	ers wells) (L M F	Environment (i.e., heat, cold, ice)	(L MH)
Chemical (i.e., fuel, acid, paint)	(LMCH)	Biological (i.e., ticks, pois	on ivy) (L M		(LM(H)
Sound (i.e., machinery, generate	ors) (LMH)	Personal (i.e. alone, night	Action Control of the	Driving (i.e. an ATV, boat, dozer)	(L MH)
Continue TRACK	(Process	on Page 2			

TAILGATE	HEALTH & SAFETY MEETING	FORM - Pg. 2
ntrol the hazards (Check all and discuss the HASP, applicable JSAs, and other control process.)	ose methods to control the hazards that wi	Il be implemented for the day): Review the nal control processes.
STOP WORK AUTHORITY (Must be address Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	Substitution Administrative controls Hearing Conservation Exposure Guidelines Fall Protection TIP conducted (specify job/JSA)	ements below) Isolation Monitoring Respiratory Protection Decon Procedures Work Zones/Site Control Traffic Control Other (specify)
Signature and	d Certification Section - Site S	
Marrial Tolors Arounds	any/Signature M T T T T T T T T T T T T	Initial & Sign in Time Initial & Sign out Time I have read and understand the HASP

Important Information and Numbers All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.	Visitor Name/Co - not involved in wor	uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site,
In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In Out	project, job or task hazard assessment. I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In Out	If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In Out	I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In Out	hazard.
Post Daily Activities Review - Re Lessons learned and best practices learn Incidents that occurred today: Any Stop Work interventions today? Corrective/Preventive Actions needed for Any other H&S issues:	ed today:	rk (Check those applicable and explain:)



TGM + project number plus date as follows: xxxxxxxxxxxxxxxxxx - dd/mm/year

TAILGATE HEALTH & SAFETY MEETING FORM This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations onsite during the day are required to attend this meeting and to acknowledge their attendance, at least daily. Project Name: Project Location: Time: Signature/Title: Client: Client Contact: Subcontractor companies: N/A TRACKing the Tailgate Meeting Think through the Tasks (list the tasks for the day): Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or If there are none, write other party activities that may pose hazards to ARCADIS operations "None" here: If yes, describe them here: How will they be controlled? Prework Authorization - check activities to be conducted that require permit Doc# issuance or completion of a checklist or similar before work begins: Doc# Not applicable Working at Height Doc# Confined Space Energy Isolation (LOTO) Excavation/Trenching Hot Work Mechanical Lifting Ops Overhead & Buried Utilities Other permit Discuss following questions (for some review previous day's post activities). Check if yes: Topics from Corp H&S to cover? Incidents from day before to review? Lessons learned from the day before? Any Stop Work Interventions yesterday? Any corrective actions from yesterday? Will any work deviate from plan? If deviations, notify PM & client JSAs or procedures are available? Field teams to "dirty" JSAs, as needed? All equipment checked & OK? Staff has appropriate PPE? Staff knows Emergency Plan (EAP)? Staff knows gathering points? Comments: Recognize the hazards (check all those that are discussed) (Examples are provided) and Assess the Risks (Low, Medium, High circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category. Gravity (i.e., ladder, scaffold trips) (L MH) Motion (i.e. traffic moving water) Mechanical (i.e., augers, motors) (LMH) Electrical (i.e., utilities, lightning) Environment (i.e., heat, cold, ice) (L M (H) 0~~0 Chemical (i.e., fuel, acid, paint) Biological (i.e., ticks, poison ivy) (L M (H) Sound (i.e., machinery, generators) Personal (i.e. alone, night, not fit) (L M H) (L M/H) Driving (i.e. car, ATV, boat, dozer) (LMH)

ontinue TRACK Process on Page 2

	HEALTH & SAFETY MEETING F	ORM - 1 g. Z		
ontrol the hazards (Check all and discuss the HASP, applicable JSAs, and other control process.)	ose methods to control the hazards that will esses. Discuss and document any additiona	be implemented for all control processes.	the day): Rev	iew the
STOP WORK AUTHORITY (Must be address Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)			lures Site Control	
Signature an	d Certification Section - Site St	aff and Visitors	2	
Name/Compa	any/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Maintains Ancades	W-DF	0720		
Important Information and Numbers All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.	Visitor Name/Co - not involved in work	uncertain about hea hazard or additional	Ith & safety or if any mitigation not recor	one identifies a
In the event of an injury, employees will call WorkCare at	In Out	project, job or task I I will be alert to any	changes in person	
1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.		the work site or haz hazard assessment	1,5	the original
1.800.455.6155 and then notify the field supervisor who	In Out		s. STOP THE JOB, I w	vill perform
1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844. In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at	In Out	I will not assist a swork unless it is ab.	s. STOP THE JOB, I was mend the hazard as subcontractor or other solutely necessary as	will perform ssessments or the er party with their and then only afte
1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844. In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756. In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify		If it is necessary to TRACK; and then a HASP as needed.	s. STOP THE JOB, I was mend the hazard as subcontractor or other solutely necessary as	will perform ssessments or the er party with their and then only afte
1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844. In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756. In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at	In Out In Out view at end of day or before next day's work	If it is necessary to TRACK; and then a HASP as needed. I will not assist a swork unless it is ab: I have done TRACK hazard.	s. STOP THE JOB, I was mend the hazard as subcontractor or other solutely necessary as and I have thorough	will perform esessments or the er party with their and then only after they controlled the



TGM + project number plus date as follows: xxxxxxxxxxxxxxxxxx - dd/mm/year

This form documents the tailgat	e meeting conducted in accordary are required to attend this me	nce with the Project HASP.	Personnel who perform work operations on-
Project Name:	Termina	Project Loc	
Date: Time:	Conducted by:	Signature/T	
Client:	Client Contact:	Subcontrac	tor companies: N/A
TRACKing the Tailga	ate Meeting		
Think through the Tasks (list the	tasks for the day):		
1 Mobilization	3 6-00-1	t banyling - pallato	5
2 Desmobilizati	ion 4 Equipa	en fakinto	6
	- Check the box if there are any activities that may pose hazard		If there are none, write "None" here:
How will they be controlled?		-	
Prework Authorization - check	activities to be conducted that re	equire permit	
issuance or completion of a checonomic Not applicable	klist or similar before work begi	ns: Doc#	<u>Doc #</u>
Energy Isolation (LOTO)	Doc # Working at Hei		Confined Space Hot Work
Mechanical Lifting Ops	Overhead & Bu		Other permit
The state of the s	NS (for some review previous day's post ac	tivities). Check if yes:	Topics from Corp H&S to cover?
Incidents from day before to r	eview? Lessons learne	d from the day before?	Any Stop Work Interventions yesterday?
Any corrective actions from ye	esterday? Will any work	deviate from plan?	If deviations, notify PM & client
JSAs or procedures are availa	able? Field teams to	'dirty" JSAs, as needed?	All equipment checked & OK?
Staff has appropriate PPE?	Staff knows Em	ergency Plan (EAP)?	Staff knows gathering points?
Comments:			
Recognize the hazards (check a	Il those that are discussed) (Exa	mples are provided) and A	ssess the Risks (Low, Medium, High -
			ly list them under the hazard category.
Gravity (i.e., ladder, scaffold trips)	(L M H) Motion (i.e., traffic	, moving water) (L (M) H)	Mechanical (i.e., augers, motors) (L M H)
Electrical (i.e., utilities, lightning)	(LM H) Pressure (i.e., ga	s cylinders, wells) (L MH)	Environment (i.e., heat cold, ice) (L M (H)
Chemical (i.e., fuel, acid, paint)	(L M H) Biological (i.e., tid		Radiation (i.e., alpha, sun laser) (L M/R)
Sound (i.e., machinery, generators)	(L M H) Personal (i.e. along	ne, night, not fit) (L M H)	Driving (i.e. car, ATV, boat, dozer) (L) M H)
ontinue TRACK I	Process on Page	2	

TAILGATE	HEALTH & SAFETY MEETING F	ORM - Pg. 2
Control the hazards (Check all and discuss the HASP, applicable JSAs, and other control process.)	hose methods to control the hazards that will	pe implemented for the day): Review the
STOP WORK AUTHORITY (Must be address Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	essed in every Tailgate meeting - (See statement of Substitution Administrative controls Hearing Conservation Exposure Guidelines Fall Protection TIP conducted (specify job/JSA)	Isolation Monitoring Respiratory Protection Decon Procedures Work Zones/Site Control Traffic Control Other (specify)
Signature an	d Certification Section - Site Sta	ff and Visitors
Marcolat TOPS / Ducas	any/Signature Loods M D R	Initial & Sign in Time Initial & Sign out Time Initial & Sign out Understand the HASP
Important Information and Numbers All site staff should arrive fit for work. If not, they should	Visitor Name/Co - not involved in work	I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site,
In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	In Out	project, job or task hazard assessment. I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In Out	If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In Out	I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In Out	hazard.
Post Daily Activities Review - Re Lessons learned and best practices learn Incidents that occurred today: Any Stop Work interventions today? Corrective/Preventive Actions needed for Any other H&S issues:		(Check those applicable and explain:)
Keep H&S 1 ^s	t in all things	WorkCare - 1.800.455.6155



Document Control Number:TGM -

TGM + project number plus date as follows: xxxxxxxxxxxxxxxxx - dd/mm/year

This form documents th	e tailgate meeting	TE HEALTH & SA conducted in accordance w	with the Project HASP.	Personnel who perform work ope	erations on-
site durin	ng the day are requi	red to attend this meeting	and to acknowledge th	heir attendance, at least daily.	orditorio C.
	Puma	Terminal	Project Loc	cation: Boyonon P.1	3
Date:	Conducto	ed by:	Signature/	Title: My Tex	y
Client:	Client Co	entact:	Subcontrac	ctor companies: N/A	
TRACKing the	Tailgate Me	eting	Per de la constitución de la con		
Think through the Tasks	(list the tasks for t	he day):			MINOR SHARE OF SHARE
1 MObiliza	tion	3 ground w	atu songlia	5	
2 Des mobilis	zation	3 ground or 4 capulprent	+ calibrating	6	
of	ther party activities	e box if there are any other that may pose hazards to A		If there are none, write "None" here	
If yes, describe the	em nere:				·
How will they be con	ntrolled?				
Prework Authorization issuance or completion of	- check activities to	be conducted that require	permit Doc#		Doc #
Not applicable	Doc #	Working at Height		Confined Space	
Energy Isolation (LO		Excavation/Trenching	g	Hot Work	*
Mechanical Lifting Op	os	Overhead & Buried L	Jtilities	Other permit	
Discuss following	questions (for some r	eview previous day's post activities).	Check if yes :	Topics from Corp H&S to cov	ver?
Incidents from day be		Lessons learned from	AND STREET, STREET, ST. ST.	Any Stop Work Interventions	
Any corrective actions	s from yesterday?	Will any work deviate		If deviations, notify PM & clie	
JSAs or procedures a		Field teams to "dirty"		All equipment checked & OK	
Staff has appropriate		Staff knows Emerger		Staff knows gathering points'	
		Stall knows Emerger	icy Fiaii (EAF)?	L Clair Knows gathering points	•
Comments:					
Recognize the hazards (check all those tha	t are discussed) (Examples	s are provided) and A	ssess the Risks (<u>L</u> ow, <u>M</u> edium, fly list them under the hazard ca	<u>H</u> igh -
Gravity (i.e., ladder, scaffo		-/ ~			
Oravity (i.e., ladder, scand	old, trips) (E 441 (1)	Wiotion (i.e., tranic, movin	g water) (L W(H))	Mechanical (i.e., augers, motors)	(LMH)
Efectrical (i.e., utilities, lig	htning) (CM H)	Pressure (i.e., gas cylind	lers, wells) (L M H)	Environment (i.e. heat) cold, ice)	(L M(H))
Chemical (i.e., fuel, acid,	paint) (L MH)	Biological (i.e., ticks, pois	son ivy) (L MH)	Radiation (i.e., alpha, sun, laser)	(L M H)
Sound (i.e., machinery, ge	nerators) (L M H)	Personal (i.e. alone, nigh	nt, not fit) (L M A)	Driving (i.e. car ATV, boat, dozer)	(L M(H)
Continue TRA	CK Proces	ss on Page 2			

TAILGATE	HEALTH	& SAFETY MEETING F	ORM - Pg	. 2		
Control the hazards (Check all and discuss the HASP, applicable JSAs, and other control products)						iew the
STOP WORK AUTHORITY (Must be address Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	Substitution Administration Hearing Exposur Fall Pro	ution strative controls g Conservation tre Guidelines	Isolation Monitor Respira	in ring atory P Proced Cones/S Control	Site Control	
Signature an	d Certific	cation Section - Site St	aff and Vi	sitor	<u>S</u>	
Name/Comp	any/Signatu	ire	Initial &	STATE OF STREET	Initial & Sign out Time	I have read and understand the HASP
Marcial Hors / Averages	1 4	D49	0	15		TINO
Important Information and Numbers All site staff should arrive fit for work. If not, they should	Visitor N	ame/Co - not involved in work	uncertain a	bout hea	any time anyone is o	one identifies a
report to the supervisor any restrictions or concerns. In the event of an injury, employees will call WorkCare at	In	Out	project, job	or task h	mitigation not reconnazard assessment.	
1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.				te or haz	changes in personn ards not covered by s.	
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	In	Out	If it is nece	ssary to s	STOP THE JOB, I w mend the hazard as	
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In	Out	I will not a	I will not assist a subcontractor or other party work unless it is absolutely necessary and ther I have done TRACK and I have thoroughly con		nd then only after
Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	In	Out	hazard.	5 110101	and Thave blolody	my controlled the
Post Daily Activities Review - Re Lessons learned and best practices learn Incidents that occurred today: Any Stop Work interventions today? Corrective/Preventive Actions needed for	eview at end ned today:	of day or before next day's work		se app	licable and ex	plain:)
Any other H&S issues:						



Document Control Number:TGM - EOOL. 160GB - 19/01/17
TGM + project number plus date as follows: xxxxxxxxxxxxxxxxxxx - dd/mm/year

TAIL	GATE HEALTH & SAF	TY MEETING FORM	
This form documents the tailgate med	eting conducted in accordance with	the Project HASP. Personnel who	perform work operations on-
Project Name:	required to attend this meeting and	Project Location:	at least daily.
	ducted by:	Signature/Title:	T
	nt Contact:	Subcontractor companies	:: N/A
TRACKing the Tailgate	Meeting		
Person Design Belleviness in the land	3 Ground no 4 Equipment		
Other Hazardous Activities - Che other party acti If yes, describe them here: How will they be controlled?	eck the box if there are any other Al vities that may pose hazards to AR	CADIS, Client or If the	ere are none, write "None" here:
Prework Authorization - check activities under or completion of a checklist of the last of	ties to be conducted that require peor similar before work begins: oc #	Confined Sp	
Discuss following questions (for Incidents from day before to review Any corrective actions from yesterd JSAs or procedures are available? Staff has appropriate PPE? Comments:		e day before? Any Stop W om plan? If deviations As, as needed? All equipment	Corp H&S to cover? ork Interventions yesterday? , notify PM & client nt checked & OK? gathering points?
	te that are discussed) (Examples are sessment of hazards to be encounted (H) Motion (i.e., traffic moving was MH) Pressure (i.e., gas cylinders)	red today and briefly list them und	er the hazard category. (i.e., augers, motors) (L M H)
2005	Biological (i.e., ticks, poison (I.e., tick	t fit) (L M H) Driving (i.e.	Ir, ATV, boat, dozer) (L M(H)

Continue TRACK Process on Page 2

Control the bazards (Check all and discuss the		
HASP, applicable JSAs, and other control proce	se methods to control the hazards that sses. Discuss and document any addit	
Elimination Engineering controls General PPE Usage Personal Hygiene Emergency Action Plan (EAP) JSA to be developed/used (specify)	Seed in every Tailgate meeting - (See standard Substitution Administrative controls Hearing Conservation Exposure Guidelines Fall Protection TIP conducted (specify job/JSA)	Isolation Monitoring Respiratory Protection Decon Procedures Work Zones/Site Control Traffic Control Other (specify)
Signature and	Certification Section - Site	Staff and Visitors
Name/Compar	ny/Signature	Initial & Sign in Initial & Sign out Understand the Time HASP
Marcolal Plans Avent	e MDI	9/30
Important Information and Numbers All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns. In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.	Visitor Name/Co - not involved in wo	I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment. I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.
In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.	n Out	If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.
In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp	In Out	I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the
	In Out	hazard.
Post Daily Activities Review - Review Lessons learned and best practices learned Incidents that occurred today: Any Stop Work interventions today? Corrective/Preventive Actions needed for full Any other H&S issues:	d today:	work (Check those applicable and explain:)

MONITORING			(TOP OF	GROUND				Groundwater		
WELL	NORTHING	EASTING	CASING)	ELEVATION	Sample date	Product level	water level	elevation	Duplicate Date	
42B	867876.014	760741.654	29.507	28.46	01/19/17	23.67	23.40			3,1
40B	867805.31	760593.163	20.277	19.17	01/19/17	12.28	13.69			360
91A	867621.796	759923.514	22.81	20.12	12/20/16	1	1.55			
18D	867041.366	759973.079	31.802	30.13	12/27/16		42.21 /10.80			
87A	867178.651	759812.194	27.726	25.54	12/25/12	/	6.36			
88A	867585.447	759561.051	25.072	22.17	12/27/16	/	3,40	16)		
99A	867751.866	759515.901	24.355	21.12	12/20/16	/	10.43			
98A	867714.022	759334.252	21.654	18.71	12/27/16		4.93			
Т9	868240.885	759340.897	16.517	15.65	17/22/10	4.38	4,60			
30A	868213.871	759747.423	17.418	15.71	12/22/16		6,00		213	
48B	868144.503	760085.505	20.413	17.04	01/05/15		5.76			
P 119	868069.644	761317.213	24.356	21.57	12/20/16	1	11.15	3		
P118	868267.634	761278.685	17.881	15.25	12/20/16	//	6.52		/	
83B2	868649.947	761520.841	11.071	8.14			5.55			
83A	868648.999	761516.105	11.933	8.36	12/20/16	/	3.86	r r		
75B2	870137.591	761331.969	6.631	4.02	01/17/17	4	2.95 2.00		DUPOOL MS/MST	
114A	869256.828	761431.111	7.252	5.22	01/18/17		2.95			
AD2	868563.969	761143.806	15.314	12.84	12/20/14)	4.34	4.35			
ADT AD-01	868594.603	761051.808	17.328	14.82	175/12/12 SET		3,62			
57A	868552.701	760875.865	19.716	17.94	7 1		2042			
AD3	868550.322	760757.448	21.381	18.73	12/20/16		3.94		12 /20/14 DUDOO	į.
AD4	868485.217	760442.758	21.146	18.47	12/21/10	/	6.28			
33A	868463.778	760362.924	15.365	17.8	12/21/16		5.40			
P116	869159.846		8.468	5.89	12/4/11	-	3.58			
P117	868953.949		10.655	7.75	12/21/16		3.38			
65A	868587.685		15.9	14.31	12/21/16		3.14			
15A	868914.863		10.645	10.36	10 / - 1/ 0		1.44	- y		-
15B2	868919.67	- All the second	11.642	9.79	12/22/10		6,05			
15B	868933.999		12.036	9.94	12/22/16		6,38		12/22/16 DUPOO2/	2/
86A	868872.763		11.58	8.9			4.30			
MP8	868808.442		12.462	9.97	7.77		6.33			
MP9	868815.934		John Colonia		- 1 A		3.81			
MP4	868775.188	70.72-11.00-22.00-20.00-2		9.94			6,25			7
MP3	868784.218			6.84	1 11		3.66			
MP2	868813.822		9.869				3.13			7
DP1	868848.675		9.698		7.6	1	2.11			
MP5A	868890.661				-		4.87			
DP5	868891.602		9.667	7.73		_	2.87			
EB107	868678.518		11.286		1 1 1 1 1 1 1 1		4,60			1
EB107	868618.966						4,00			
EB108	868577.214						5.68			
	868577.214				- 1931		6.2			-
EB104	868648.128				01/03/15	T	2.12		DUDGOY MS MSA	
EB105 EB106	868670.929				01/03/15	7.796	7.60		D	7

57 poros

AD-1 4.39 4.35

		/							
EB	102 →	868491.944	759157.061	14.775	12.64		7.25		
EB	101	868465.916	759325.415	14.135	12.69	12/28/16	3.42,		
B9	2	868447.181	759268.704	14.881	12.69	12/28/12/03/10	1502.20		
B1	-	868431.822	759198.069	14.388	13.32	12/28/16	1.50		D419003
P1	20	867124.565	760234.434	28.522	25.12	12/19/16	13:20		
P1	22	867280.619	760783.67	29.399	27.55	12/19/16	14.43		
P1	23	867398.282	761149.588	43.337	4).66	12/19/16	8.70		
P1	24	867502.776	761405.294	43.274	40.52	12/19/16	32.40		
P1	21	867742.142	761389.913	40.502	37.08	12/19/10	33.40		
16	C	868479.486	759676.795	11.759	11.19	12/28/16	6.25		
10	9A	868394.381	759044.49	17.648	14.39	01/05/17	9.40		Dupoos
76.	Α -	868638.661	758785.096	14.09	1 <mark>1.58</mark>	01/12/17	8,45		
76	B2	868640.839	758790.635	14.035	11.13	01/12/17	5.93		
17	В	869260.701	759320.973	10.118	7.06	01/14/19	4.22		7
78	В	870179.155	760240.47	11,952	3.73	01/17/17	7.10		11/41
37.	Α -	868913.465	760217.188	16.803	13.84	01/12/17	6.65		700007
13	B2	868933.809	760322.733	18.059	14.81	a/12/17	12.84		
13	Α ,	868934.62	760327.039	17.426	15.55	01/12/17	6.93	y.E	
110	OB2	869431.953	760308.97	11.385	8.95	01/17/17	6.62		
110	0AB	869426.639	760305.114	12.26	9.12	P1/17/17	7.42		
11	1A	869515.288	760463.83	13.273	9.57	01/11/11	9.30).
63	Α .	868988.372	760571.613	18.574	17.25	01/18/10	2.97		
38	Α	868990.929	760577.028	17.525	15.83	01/18/17	4.45	1	
84	A	869131.225	761225.128	10.029	3.19	01/18/17	5.03		
841	B2	869131.618	761229.887	10.137	7.47	01/4/17	2.52		
77	В	870167.293	758970.04	12.932	10.15	01/19/17	6.80	Hall S	
201	В .	870173.536	759773.63	9.229	7.82	01/19/17	4.25		N TE
211	В	870211.124	760963.737	16.53	14.09	01/19/10	11.40		Dupony
WV	WTP-1				i,	12/24/16	5.92	A. L.	N-
W	NTP-2					12/28/16	6.53	The state of the s	

CADA 10 UN DUPLICADO
CADA 20 UN MS MSD



APPENDIX C

Photo Log



Puma Energy Caribe, LLC Former CAPECO Semiannual Sampling December 2016 Bayamón, Puerto Rico



Photograph 1 – Low Flow pump and water meter.



Photograph2 – ARCADIS personnel during groundwater sampling



Puma Energy Caribe, LLC Former CAPECO Semiannual Sampling December 2016 Bayamón, Puerto Rico



Photograph 3 – Wetland area



Photograph 4– ARCADIS personnel during groundwater sampling in Wetland area.

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Puma Energy Caribe, LLC Former CAPECO Semiannual Sampling December 2016 Bayamón, Puerto Rico



Photograph 5- ARCADIS personnel sampling



Photograph 6– ARCADIS personnel during groundwater sampling in Wetland area.

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APPENDIX D

Chain of Custody and Laboratory Results



1000 Riverbend Blvd. Suite F

St. Rose, LA 70087 (504) 469-0333

SAMPLE ACKNOWLEDGMENT

Samples Submitted By: BBL Caribe / Arcadis PR

Client Project ID: PUMA TERMINAL MW SAMPLING

Client PO#: None

Pace Project Manager: Juan Redondo

Phone (787)720-0319

juan.redondo@pacelabs.com

Pace Analytical Project ID: 2047806

Samples Received: December 22, 2016 01:15 PM

Estimated Completion: January 09, 2017

CC: Abner Hernandez, Marianela Mercado-Burgos, Sharon Colon

Client Specified QC Sample(s): MW-15B MS/MSD

Customer Sample ID	Pace Analytical Lab ID	Matrix	Date/Time Collected	Method
TB-122116	2047806001	Water	12/21/16 00:00	8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				Deliverable Package Level 4
EB-122116	2047806002	Water	12/21/16 09:17	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
	20.4700.5002	***	10/01/15 00 50	8270 MSSV Semivolatile Organic
MW-83B2	2047806003	Water	12/21/16 09:59	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
MW-AD-4	2047806004	Water	12/21/16 10:56	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
MW-33A	2047806005	Water	12/21/16 11:44	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
MW D116	2047206006	Watan	12/21/16 14:05	8270 MSSV Semivolatile Organic
MW-P116	2047806006	Water	12/21/16 14:05	6020 ICPMS Metals

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.





Customer Sample ID	Pace Analytical Lab ID	Matrix	Date/Time Collected	Method
Iv				Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
MW-P117	2047806007	Water	12/21/16 15:21	6020 ICPMS Metals
WIW 1117	2047000007	water	12/21/10 13.21	Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
MANU CE A	20.4700.6000	33 7	10/01/16 16 05	8270 MSSV Semivolatile Organic
MW-65A	2047806008	Water	12/21/16 16:07	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
FB-122116	2047806009	Water	12/21/16 16:15	8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
TB-122216	2047806010	Water	12/22/16 00:00	8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
EB-122216	2047806011	Water	12/22/16 08:42	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
MW-15A	2047806012	Water	12/22/16 09:38	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.





	Pace Analytical		Date/Time	
Customer Sample ID	Lab ID	Matrix	Collected	Method
				Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
CANCEL	2047806014	Water	12/22/16 11:42	No Charge
DUP002	2047806015	Water	12/22/16 00:00	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
MW-15B MS/MSD	2047806016	Water	12/22/16 11:42	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead
				6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead
				7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
FB-122216	2047806017	Water	12/22/16 11:50	8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
ГВ-122116	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone		ug/L
		Benzene		ug/L
		Bromodichloromethane		ug/L
		Bromoform		ug/L
		Bromomethane		ug/L
		2-Butanone (MEK)		ug/L
		Carbon disulfide		ug/L
		Carbon tetrachloride		ug/L
		Chlorobenzene		ug/L
		Chloroethane		ug/L
		Chloroform		ug/L
		Chloromethane		ug/L
		1,2-Dibromo-3-chloropropane		ug/L
		Dibromochloromethane		ug/L
		1,2-Dibromoethane (EDB)		ug/L
		Dichlorodifluoromethane		ug/L
		1,1-Dichloroethane		ug/L
		1,2-Dichloroethane		ug/L
		1,1-Dichloroethene		ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		ug/L
		Styrene		ug/L
		1,1,2,2-Tetrachloroethane		ug/L
		Tetrachloroethene		ug/L
		Toluene		ug/L
		1,1,1-Trichloroethane		ug/L
		1,1,2-Trichloroethane		ug/L
		Trichloroethene		ug/L ug/L
		Trichlorofluoromethane		ug/L ug/L
		Vinyl chloride		ug/L ug/L
		m&p-Xylene		ug/L ug/L
		o-Xylene		ug/L ug/L
		Methyl acetate		ug/L ug/L
B-122116	6020 MET ICPMS	Vanadium	0.005	
D-12211U	0020 MET ICPMS	Vanadium Chromium	0.003	
		Arsenic	0.001	
		Lead		
	6000 METICPMS Dissels 4 / EV		0.001	-
	6020 MET ICPMS, Dissolved (LF)	Vanadium		ug/L
		Chromium		ug/L
		Arsenic	1	ug/L

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane		ug/L
		Bromoform	0.5	ug/L
		Bromomethane		ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride		ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane		ug/L
		Chloroform		ug/L
		Chloromethane		ug/L
		1,2-Dibromo-3-chloropropane		ug/L
		Dibromochloromethane		ug/L
		1,2-Dibromoethane (EDB)		ug/L
		Dichlorodifluoromethane		ug/L
		1,1-Dichloroethane		ug/L
		1,2-Dichloroethane		ug/L
		1,1-Dichloroethene		ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		ug/L
		Styrene		ug/L
		1,1,2,2-Tetrachloroethane		ug/L
		Tetrachloroethene		ug/L ug/L
		Toluene		ug/L ug/L
		1,1,1-Trichloroethane		ug/L ug/L
		1,1,2-Trichloroethane		ug/L ug/L
		Trichloroethene		ug/L ug/L
		Trichlorofluoromethane		ug/L ug/L
		Vinyl chloride		ug/L ug/L
				ug/L ug/L
		m&p-Xylene		
		o-Xylene Mathyl agetata		ug/L
	9270 MCCV DAILL CIM CED	Methyl acetate		ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene		ug/L
		Acenaphthylene	0.1	ug/L

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Acenaphthene	0.1	ug/L
		Fluorene	0.1	ug/L
		Phenanthrene	0.1	ug/L
		Anthracene		ug/L
		Fluoranthene	0.1	ug/L
		Pyrene		ug/L
		Benzo(a)anthracene	0.1	ug/L
		Chrysene		ug/L
		Benzo(b)fluoranthene		ug/L
		Benzo(k)fluoranthene	0.1	ug/L
		Benzo(a)pyrene		ug/L
		Indeno(1,2,3-cd)pyrene		ug/L
		Dibenz(a,h)anthracene		ug/L
		Benzo(g,h,i)perylene		ug/L
		2-Methylnaphthalene		ug/L
MW-83B2	6020 MET ICPMS	Vanadium		mg/L
		Chromium		mg/L
		Arsenic		mg/L
		Lead		mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium		ug/L
	(Chromium		ug/L
		Arsenic		ug/L
		Lead		ug/L
	7470 Mercury	Mercury		ug/L
	7470 Mercury, Dissolved (LF)	Mercury		ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)		mg/L
	outsin Broyone organies	Diesel Range Organic (C10-C28)		mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone		ug/L ug/L
	0200 MB v Eow Ecver	Benzene		ug/L ug/L
		Bromodichloromethane		ug/L ug/L
		Bromoform		ug/L ug/L
		Bromomethane		ug/L ug/L
		2-Butanone (MEK)		ug/L ug/L
		Carbon disulfide		ug/L ug/L
		Carbon tetrachloride		ug/L ug/L
		Chlorobenzene		ug/L ug/L
		Chloroethane		ug/L ug/L
		Chloroform		ug/L ug/L
		Chloromethane		ug/L ug/L
		1,2-Dibromo-3-chloropropane		ug/L ug/L
		Dibromochloromethane		ug/L ug/L
		1,2-Dibromoethane (EDB)		ug/L ug/L
		Dichlorodifluoromethane		ug/L ug/L
		1,1-Dichloroethane		ug/L ug/L
		1,2-Dichloroethane		
		1,1-Dichloroethene		ug/L
		•		ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane	0.5	ug/L



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		ug/L
		Styrene		ug/L
		1,1,2,2-Tetrachloroethane		ug/L
		Tetrachloroethene		ug/L
		Toluene		ug/L
		1,1,1-Trichloroethane		ug/L
		1,1,2-Trichloroethane		ug/L
		Trichloroethene		ug/L
		Trichlorofluoromethane		ug/L
		Vinyl chloride		ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate		ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1	ug/L
	•	Acenaphthylene		ug/L
		Acenaphthene		ug/L
		Fluorene		ug/L
		Phenanthrene		ug/L
		Anthracene		ug/L
		Fluoranthene		ug/L
		Pyrene		ug/L
		Benzo(a)anthracene		ug/L
		Chrysene		ug/L
		Benzo(b)fluoranthene		ug/L
		Benzo(k)fluoranthene		ug/L
		Benzo(a)pyrene		ug/L
		Indeno(1,2,3-cd)pyrene		ug/L
		Dibenz(a,h)anthracene		ug/L
		Benzo(g,h,i)perylene		ug/L
		2-Methylnaphthalene		ug/L
IW-AD-4	6020 MET ICPMS	Vanadium		mg/L
		Chromium	0.001	_
		Arsenic		mg/L
		Lead		mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium		ug/L
	cozo iliza Territo, Dissorrea (Er)	Chromium		ug/L ug/L
		Arsenic		ug/L ug/L
		Lead		ug/L ug/L
	7470 Mercury	Mercury		ug/L
	7470 Mercury, Dissolved (LF)	Mercury		ug/L ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)		mg/L
	5013M DRO/ORO Organics	Diesel Range Organic (C10-C28)		mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L



Analyte List

	Marth a al	Commonad	Reporting	l luite
ustomer Sample ID	Method	Compound		Units
	8260 MSV Low Level	Acetone		ug/L
		Benzene		ug/L
		Bromodichloromethane		ug/L
		Bromoform		ug/L
		Bromomethane		ug/L
		2-Butanone (MEK)		ug/L
		Carbon disulfide		ug/L
		Carbon tetrachloride		ug/L
		Chlorobenzene		ug/L
		Chloroethane		ug/L
		Chloroform		ug/L
		Chloromethane		ug/L
		1,2-Dibromo-3-chloropropane		ug/L
		Dibromochloromethane		ug/L
		1,2-Dibromoethane (EDB)		ug/L
		Dichlorodifluoromethane		ug/L
		1,1-Dichloroethane		ug/L
		1,2-Dichloroethane		ug/L
		1,1-Dichloroethene		ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane		ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene		ug/L
		o-Xylene		ug/L
		Methyl acetate		ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene		ug/L
		Acenaphthylene		ug/L
		Acenaphthene		ug/L
		Fluorene		ug/L
		Phenanthrene		ug/L
		Anthracene		ug/L
		Fluoranthene		ug/L
		Pyrene		ug/L



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Benzo(a)anthracene	0.1	ug/L
		Chrysene	0.1	ug/L
		Benzo(b)fluoranthene		ug/L
		Benzo(k)fluoranthene	0.1	ug/L
		Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene		ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene		ug/L
		2-Methylnaphthalene		ug/L
MW-33A	6020 MET ICPMS	Vanadium	0.005	mg/L
		Chromium		mg/L
		Arsenic		mg/L
		Lead		mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium		ug/L
	, , ,	Chromium		ug/L
		Arsenic		ug/L
		Lead		ug/L
	7470 Mercury	Mercury		ug/L
	7470 Mercury, Dissolved (LF)	Mercury		ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)		mg/L
		Diesel Range Organic (C10-C28)		mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone		ug/L
	0200 115 (2011 2010)	Benzene		ug/L
		Bromodichloromethane		ug/L
		Bromoform		ug/L
		Bromomethane		ug/L ug/L
		2-Butanone (MEK)		ug/L
		Carbon disulfide		ug/L ug/L
		Carbon tetrachloride		ug/L ug/L
		Chlorobenzene		ug/L ug/L
		Chloroethane		ug/L ug/L
		Chloroform		ug/L ug/L
		Chloromethane		ug/L ug/L
		1,2-Dibromo-3-chloropropane		ug/L ug/L
		Dibromochloromethane		ug/L ug/L
		1,2-Dibromoethane (EDB)		ug/L ug/L
		Dichlorodifluoromethane		-
		1,1-Dichloroethane		ug/L ug/L
		1,2-Dichloroethane		
		1,1-Dichloroethene		ug/L ug/L
		cis-1,2-Dichloroethene		
				ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride	0.5	ug/L



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane		ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene		ug/L
		1,1,1-Trichloroethane		ug/L
		1,1,2-Trichloroethane		ug/L
		Trichloroethene		ug/L
		Trichlorofluoromethane		ug/L
		Vinyl chloride		ug/L
		m&p-Xylene		ug/L
		o-Xylene		ug/L
		Methyl acetate		ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene		ug/L
		Acenaphthylene		ug/L
		Acenaphthene		ug/L
		Fluorene		ug/L
		Phenanthrene		ug/L
		Anthracene		ug/L
		Fluoranthene		ug/L
		Pyrene		ug/L ug/L
		Benzo(a)anthracene		ug/L
		Chrysene		ug/L ug/L
		Benzo(b)fluoranthene		ug/L ug/L
		Benzo(k)fluoranthene		ug/L ug/L
		Benzo(a)pyrene		ug/L ug/L
		Indeno(1,2,3-cd)pyrene		ug/L ug/L
		Dibenz(a,h)anthracene		ug/L ug/L
		Benzo(g,h,i)perylene		ug/L ug/L
		2-Methylnaphthalene		ug/L ug/L
MW-P116	6020 MET ICPMS	Vanadium		mg/L
1w-F110	0020 MET ICFMS	Chromium		mg/L
				-
		Arsenic Lead		mg/L mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium		-
	6020 MET ICPMS, Dissolved (LF)	Chromium		ug/L
		Arsenic		ug/L
				ug/L
	7470 M	Lead		ug/L
	7470 Mercury	Mercury		ug/L
	7470 Mercury, Dissolved (LF)	Mercury		ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)		mg/L
	2001 CON DEEX MEDIC OF C	Diesel Range Organic (C10-C28)		mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone		ug/L
		Benzene		ug/L
		Bromodichloromethane		ug/L
		Bromoform		ug/L
		Bromomethane		ug/L
		2-Butanone (MEK)	2	ug/L



Analyte List

ictomor Comple ID	Method	Compound	Reporting Limit	Units
stomer Sample ID	Wethou	Compound Carbon disulfide		
		Carbon disunide Carbon tetrachloride		ug/L ug/L
		Chlorobenzene		ug/L ug/L
		Chloroethane		ug/L ug/L
		Chloroform		ug/L ug/L
		Chloromethane		ug/L ug/L
		1,2-Dibromo-3-chloropropane		ug/L ug/L
		Dibromochloromethane		ug/L ug/L
		1,2-Dibromoethane (EDB)		ug/L ug/L
		Dichlorodifluoromethane		-
		1.1-Dichloroethane		ug/L
		1,2-Dichloroethane		ug/L
		1,1-Dichloroethene		ug/L ug/L
		cis-1,2-Dichloroethene trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
				ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L ug/L
		Ethylbenzene 2-Hexanone		
				ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		ug/L
		Styrene		ug/L
		1,1,2,2-Tetrachloroethane		ug/L
		Tetrachloroethene		ug/L
		Toluene		ug/L
		1,1,1-Trichloroethane		ug/L
		1,1,2-Trichloroethane		ug/L
		Trichloroethene		ug/L
		Trichlorofluoromethane		ug/L
		Vinyl chloride		ug/L
		m&p-Xylene		ug/L
		o-Xylene		ug/L
	000011001111111111111111111111111111111	Methyl acetate		ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene		ug/L
		Acenaphthylene		ug/L
		Acenaphthene		ug/L
		Fluorene		ug/L
		Phenanthrene		ug/L
		Anthracene		ug/L
		Fluoranthene		ug/L
		Pyrene		ug/L
		Benzo(a)anthracene		ug/L
		Chrysene		ug/L
		Benzo(b)fluoranthene		ug/L
		Benzo(k)fluoranthene		ug/L
		Benzo(a)pyrene		ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L



Analyte List

			Reporting	
Customer Sample ID	Method	Compound		Units
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
MW-P117	6020 MET ICPMS	Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic	0.001	
		Lead	0.001	mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium	5	ug/L
		Chromium	1	ug/L
		Arsenic	1	ug/L
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane		ug/L
		Bromoform		ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)		ug/L
		Carbon disulfide		ug/L
		Carbon tetrachloride		ug/L
		Chlorobenzene		ug/L
		Chloroethane		ug/L
		Chloroform		ug/L
		Chloromethane		ug/L
		1,2-Dibromo-3-chloropropane		ug/L
		Dibromochloromethane		ug/L
		1,2-Dibromoethane (EDB)		ug/L
		Dichlorodifluoromethane		ug/L
		1,1-Dichloroethane		ug/L
		1,2-Dichloroethane		ug/L
		1,1-Dichloroethene		ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		ug/L
		Styrene		ug/L
		1,1,2,2-Tetrachloroethane		ug/L ug/L
		Tetrachloroethene		ug/L ug/L
			())	u2/17



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate		ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene		ug/L
	•	Acenaphthylene	0.1	ug/L
		Acenaphthene		ug/L
		Fluorene		ug/L
		Phenanthrene		ug/L
		Anthracene		ug/L
		Fluoranthene		ug/L
		Pyrene		ug/L
		Benzo(a)anthracene		ug/L
		Chrysene		ug/L
		Benzo(b)fluoranthene		ug/L
		Benzo(k)fluoranthene		ug/L
		Benzo(a)pyrene		ug/L
		Indeno(1,2,3-cd)pyrene		ug/L
		Dibenz(a,h)anthracene		ug/L
		Benzo(g,h,i)perylene		ug/L
		2-Methylnaphthalene		ug/L
W-65A	6020 MET ICPMS	Vanadium	0.005	
W 03/1	0020 WIET TOT WIS	Chromium	0.001	-
		Arsenic	0.001	-
		Lead	0.001	-
	6020 MET ICPMS, Dissolved (LF)	Vanadium		ug/L
	0020 MET ICT MB, Dissolved (ET)	Chromium		ug/L ug/L
		Arsenic		ug/L ug/L
		Lead		ug/L ug/L
	7470 Mercury	Mercury		ug/L ug/L
	7470 Mercury 7470 Mercury, Dissolved (LF)	Mercury		ug/L ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)		mg/L
	0013W DRO/ORO Olganics	Diesel Range Organic (C10-C28)		mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone		-
	0200 IVIS V LOW LEVEL	Benzene		ug/L
		Bromodichloromethane		ug/L ug/L
		Bromoform		
		Bromonorm Bromomethane		ug/L
		2-Butanone (MEK)		ug/L
		2-Butanone (MEK) Carbon disulfide		ug/L
				ug/L
		Carbon tetrachloride		ug/L
		Chlorobenzene		ug/L
		Chloroethane		ug/L
		Chloroform		ug/L
		Chloromethane	0.5	ug/L



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		ug/L
		Styrene		ug/L
		1,1,2,2-Tetrachloroethane		ug/L
		Tetrachloroethene		ug/L
		Toluene		ug/L
		1,1,1-Trichloroethane		ug/L
		1,1,2-Trichloroethane		ug/L
		Trichloroethene		ug/L
		Trichlorofluoromethane		ug/L
		Vinyl chloride		ug/L ug/L
		m&p-Xylene		ug/L
		o-Xylene		ug/L ug/L
		Methyl acetate		ug/L ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene		ug/L ug/L
	6270 MSS V TAIT by SHVI SEI	Acenaphthylene		ug/L ug/L
		Acenaphthene		ug/L ug/L
		Fluorene		ug/L ug/L
		Phenanthrene		ug/L ug/L
		Anthracene		ug/L ug/L
		Fluoranthene		ug/L ug/L
				ug/L ug/L
		Pyrene Benzo(a)anthracene		-
				ug/L
		Chrysene Renge (h) fluorenthene		ug/L
		Benzo(b)fluoranthene		ug/L
		Benzo(k)fluoranthene		ug/L
		Benzo(a)pyrene		ug/L
		Indeno(1,2,3-cd)pyrene		ug/L
		Dibenz(a,h)anthracene		ug/L
		Benzo(g,h,i)perylene		ug/L
122116	0001 COV PERV MERE CRO	2-Methylnaphthalene		ug/L
3-122116	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone		ug/L
		Benzene	0.5	ug/L



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Bromodichloromethane		ug/L
		Bromoform		ug/L
		Bromomethane		ug/L
		2-Butanone (MEK)		ug/L
		Carbon disulfide		ug/L
		Carbon tetrachloride		ug/L
		Chlorobenzene		ug/L
		Chloroethane		ug/L
		Chloroform		ug/L
		Chloromethane		ug/L
		1,2-Dibromo-3-chloropropane		ug/L
		Dibromochloromethane		ug/L
		1,2-Dibromoethane (EDB)		ug/L ug/L
		Dichlorodifluoromethane		ug/L ug/L
		1,1-Dichloroethane		ug/L ug/L
		1,2-Dichloroethane		ug/L ug/L
		1,1-Dichloroethene		ug/L ug/L
		cis-1,2-Dichloroethene		ug/L ug/L
		trans-1,2-Dichloroethene		ug/L ug/L
		1,2-Dichloropropane		ug/L ug/L
		cis-1,3-Dichloropropene		ug/L ug/L
		trans-1,3-Dichloropropene		ug/L ug/L
		Ethylbenzene		ug/L ug/L
		2-Hexanone		-
				ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		ug/L
		Styrene 1,1,2,2-Tetrachloroethane		ug/L ug/L
		Tetrachloroethene		
		Toluene		ug/L
				ug/L
		1,1,1-Trichloroethane		ug/L
		1,1,2-Trichloroethane Trichloroethene		ug/L
				ug/L
		Trichlorofluoromethane		ug/L
		Vinyl chloride		ug/L
		m&p-Xylene		ug/L
		o-Xylene		ug/L
100016	0001 COV DEEX MEDE COO	Methyl acetate		ug/L
3-122216	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone		ug/L
		Benzene		ug/L
		Bromodichloromethane		ug/L
		Bromoform		ug/L
		Bromomethane		ug/L
		2-Butanone (MEK)		ug/L
		Carbon disulfide		ug/L
		Carbon tetrachloride		ug/L
		Chlorobenzene	0.5	ug/L



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane		ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)		ug/L
		Dichlorodifluoromethane		ug/L
		1,1-Dichloroethane		ug/L
		1,2-Dichloroethane		ug/L
		1,1-Dichloroethene		ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
		cis-1,3-Dichloropropene		
		trans-1,3-Dichloropropene		-
		Ethylbenzene		
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		
		Styrene		ug/L
		1,1,2,2-Tetrachloroethane		-
		Tetrachloroethene		-
		Toluene		-
		1,1,1-Trichloroethane		-
		1,1,2-Trichloroethane		
		Trichloroethene		
		Trichlorofluoromethane		
		Vinyl chloride		
		m&p-Xylene		
		o-Xylene		
		Methyl acetate		
B-122216	6020 MET ICPMS	Vanadium		
EB-122210	0020 MET ICFMS	Chromium	0.5 to 0.	
		Arsenic		
		Lead		
	CO20 MET ICOME Discribed (LE)	Vanadium		-
	6020 MET ICPMS, Dissolved (LF)			
		Chromium		
		Arsenic		ug/L
	7470 14	Lead		ug/L
	7470 Mercury	Mercury		
	7470 Mercury, Dissolved (LF)	Mercury		
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)		
	0004 GOVENIES	Diesel Range Organic (C10-C28)		
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone		ug/L
		Benzene		-
		Bromodichloromethane		ug/L
		Bromoform	0.5	ug/L



Analyte List

ustomer Sample ID	Method	Compound	Reporting Limit	Units
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene		ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		ug/L
		Styrene		ug/L
		1,1,2,2-Tetrachloroethane		ug/L
		Tetrachloroethene		ug/L
		Toluene		ug/L
		1,1,1-Trichloroethane		ug/L
		1,1,2-Trichloroethane		ug/L
		Trichloroethene		ug/L
		Trichlorofluoromethane		ug/L
		Vinyl chloride		ug/L
		m&p-Xylene		ug/L
		o-Xylene		ug/L
		Methyl acetate		ug/L ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene		ug/L ug/L
	0270 NISS V 17111 by SIN1 SEI	Acenaphthylene		ug/L
		Acenaphthene		ug/L ug/L
		Fluorene		ug/L ug/L
		Phenanthrene		ug/L ug/L
		Anthracene		
		Fluoranthene		ug/L
				ug/L
		Pyrene Renze(a) anthresens		ug/L
		Benzo(a)anthracene		ug/L
		Chrysene		ug/L
		Benzo(b)fluoranthene		ug/L
		Benzo(k)fluoranthene	0.1	ug/L



Analyte List

		Reporting		
Customer Sample ID	Method	Compound		Units
		Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
MW-15A	6020 MET ICPMS	Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic		mg/L
		Lead		mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium	5	ug/L
		Chromium	1	ug/L
		Arsenic	1	ug/L
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene		ug/L
		Chloroethane		ug/L
		Chloroform		ug/L
		Chloromethane		ug/L
		1,2-Dibromo-3-chloropropane		ug/L
		Dibromochloromethane		ug/L
		1,2-Dibromoethane (EDB)		ug/L
		Dichlorodifluoromethane		ug/L
		1,1-Dichloroethane		ug/L
		1,2-Dichloroethane		ug/L
		1,1-Dichloroethene		ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L ug/L
		Methyl-tert-butyl ether		ug/L ug/L
		Styrene		ug/L ug/L
		Styrelle	1	ug/L



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane		ug/L
		Trichloroethene		ug/L
		Trichlorofluoromethane		ug/L
		Vinyl chloride		ug/L
		m&p-Xylene		ug/L
		o-Xylene		ug/L
		Methyl acetate		ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene		ug/L
	·	Acenaphthylene		ug/L
		Acenaphthene		ug/L
		Fluorene		ug/L
		Phenanthrene		ug/L
		Anthracene		ug/L
		Fluoranthene		ug/L
		Pyrene		ug/L
		Benzo(a)anthracene		ug/L
		Chrysene		ug/L
		Benzo(b)fluoranthene		ug/L
		Benzo(k)fluoranthene		ug/L
		Benzo(a)pyrene		ug/L
		Indeno(1,2,3-cd)pyrene		ug/L ug/L
		Dibenz(a,h)anthracene		ug/L
		Benzo(g,h,i)perylene		ug/L ug/L
		2-Methylnaphthalene		ug/L ug/L
W-15B2	6020 MET ICPMS	Vanadium		mg/L
W-13B2	0020 WET ICT WIS	Chromium		mg/L
		Arsenic		mg/L
		Lead		mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium		ug/L
	0020 MET ICFMS, Dissolved (EF)	Chromium		-
		Arsenic		ug/L
		Lead		ug/L
	7470 Morrowery			ug/L
	7470 Mercury 7470 Mercury, Dissolved (LF)	Mercury		ug/L
	•	Mercury Oil Banga Organics (> C28 C40)		ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)		mg/L
	2001 COVIDTEN MEDE CRO	Diesel Range Organic (C10-C28)		mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone		ug/L
		Benzene		ug/L
		Bromodichloromethane		ug/L
		Bromoform		ug/L
		Bromomethane		ug/L
		2-Butanone (MEK)		ug/L
		Carbon disulfide		ug/L
		Carbon tetrachloride		ug/L
		Chlorobenzene		ug/L
		Chloroethane	0.5	ug/L



Analyte List

ustomer Sample ID	Method	Compound	Reporting Limit	Units
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane		ug/L
		1,1-Dichloroethane		ug/L
		1,2-Dichloroethane		ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		ug/L
		Styrene		ug/L
		1,1,2,2-Tetrachloroethane		ug/L
		Tetrachloroethene		ug/L
		Toluene		ug/L
		1,1,1-Trichloroethane		ug/L
		1,1,2-Trichloroethane		ug/L
		Trichloroethene		ug/L
		Trichlorofluoromethane		ug/L
		Vinyl chloride		ug/L
		m&p-Xylene		ug/L
		o-Xylene		ug/L
		Methyl acetate		ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene		ug/L
	02/01/188 / 11/11/09 81/1/82/	Acenaphthylene		ug/L
		Acenaphthene		ug/L
		Fluorene		ug/L
		Phenanthrene		ug/L ug/L
		Anthracene		ug/L ug/L
		Fluoranthene		ug/L
		Pyrene		ug/L ug/L
		Benzo(a)anthracene		ug/L ug/L
		Chrysene		ug/L ug/L
		Benzo(b)fluoranthene		ug/L ug/L
		Benzo(k)fluoranthene		ug/L ug/L
		Benzo(a)pyrene		ug/L ug/L
		Indeno(1,2,3-cd)pyrene		ug/L ug/L
		Dibenz(a,h)anthracene		ug/L ug/L
		Benzo(g,h,i)perylene		
				ug/L
		2-Methylnaphthalene	Λ 1	ug/L



Analyte List

		Reporting		
Customer Sample ID	Method	Compound		Units
		Chromium		mg/L
		Arsenic	0.001	mg/L
		Lead	0.001	mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium	5	ug/L
		Chromium	1	ug/L
		Arsenic	1	ug/L
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane		ug/L
		2-Butanone (MEK)		ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane		ug/L
		Chloroform		ug/L
		Chloromethane		ug/L
		1,2-Dibromo-3-chloropropane		ug/L
		Dibromochloromethane		ug/L
		1,2-Dibromoethane (EDB)		ug/L
		Dichlorodifluoromethane		ug/L
		1,1-Dichloroethane		ug/L
		1,2-Dichloroethane		ug/L
		1,1-Dichloroethene		ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L
		Methyl-tert-butyl ether		ug/L ug/L
		Styrene		ug/L ug/L
		1,1,2,2-Tetrachloroethane		ug/L ug/L
		Tetrachloroethene		ug/L ug/L
		Toluene		ug/L ug/L
		1,1,1-Trichloroethane		ug/L ug/L
		1,1,2-Trichloroethane		ug/L ug/L
		Trichloroethene		
				ug/L
		Trichlorofluoromethane	0.5	ug/L



Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate		ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1	ug/L
	·	Acenaphthylene		ug/L
		Acenaphthene	0.1	ug/L
		Fluorene		ug/L
		Phenanthrene		ug/L
		Anthracene		ug/L
		Fluoranthene		ug/L
		Pyrene		ug/L
		Benzo(a)anthracene		ug/L
		Chrysene		ug/L
		Benzo(b)fluoranthene		ug/L
		Benzo(k)fluoranthene		ug/L
		Benzo(a)pyrene		ug/L
		Indeno(1,2,3-cd)pyrene		ug/L
		Dibenz(a,h)anthracene		ug/L
		Benzo(g,h,i)perylene		ug/L
		2-Methylnaphthalene		ug/L
IW-15B MS/MSD	6020 MET ICPMS	Vanadium		mg/L
111 135 116/1155	0020 MB1 Te1 MB	Chromium		mg/L
		Arsenic		mg/L
		Lead		mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium		ug/L
	0020 MET ICT MIS, DISSOIVER (EI)	Chromium		ug/L ug/L
		Arsenic		ug/L ug/L
		Lead		ug/L ug/L
	7470 Mercury	Mercury		ug/L ug/L
	7470 Mercury, Dissolved (LF)	Mercury		ug/L ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)		mg/L
	8013W DRO/ORO Organics	Diesel Range Organic (C10-C28)		-
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		mg/L ug/L
	8260 MSV Low Level	Acetone		-
	8200 MS v Low Level	Benzene		ug/L
		Bromodichloromethane		ug/L
		Bromoform		ug/L
				ug/L
		Bromomethane		ug/L
		2-Butanone (MEK) Carbon disulfide		ug/L
				ug/L
		Carbon tetrachloride		ug/L
		Chlorothono		ug/L
		Chloroform		ug/L
		Chlorogorathana		ug/L
		Chloromethane		ug/L
		1,2-Dibromo-3-chloropropane		ug/L
		Dibromochloromethane		ug/L
		1,2-Dibromoethane (EDB)		ug/L
		Dichlorodifluoromethane	1	ug/L



Analyte List

ustomer Sample ID	Method	Compound	Reporting Limit	Units
		1,1-Dichloroethane		ug/L
		1,2-Dichloroethane		ug/L
		1,1-Dichloroethene		ug/L
		cis-1,2-Dichloroethene		ug/L
		trans-1,2-Dichloroethene		ug/L
		1,2-Dichloropropane		ug/L
		cis-1,3-Dichloropropene		ug/L
		trans-1,3-Dichloropropene		ug/L
		Ethylbenzene		ug/L
		2-Hexanone		ug/L
		Isopropylbenzene (Cumene)		ug/L
		Methylene Chloride		ug/L ug/L
		4-Methyl-2-pentanone (MIBK)		ug/L ug/L
		Methyl-tert-butyl ether		ug/L ug/L
		Styrene		ug/L ug/L
		1,1,2,2-Tetrachloroethane		ug/L ug/L
		Tetrachloroethene		ug/L ug/L
		Toluene		ug/L ug/L
		1,1,1-Trichloroethane		ug/L ug/L
		1,1,2-Trichloroethane		ug/L ug/L
		Trichloroethene		ug/L
		Trichlorofluoromethane		ug/L ug/L
		Vinyl chloride		ug/L ug/L
		m&p-Xylene		ug/L ug/L
		o-Xylene		ug/L ug/L
		Methyl acetate		ug/L ug/L
	9270 MSSV DAU by SIM SED			
	8270 MSSV PAH by SIM SEP	Naphthalene Acenaphthylene		ug/L
				ug/L
		Acenaphthene Fluorene		ug/L
		Phenanthrene		ug/L
				ug/L
		Anthracene		ug/L
		Fluoranthene		ug/L
		Pyrene Ronzo(a)anthracana		ug/L
		Benzo(a)anthracene		ug/L
		Chrysene Rama (h) fluorenthene		ug/L
		Benzo(b)fluoranthene		ug/L
		Benzo(k)fluoranthene		ug/L
		Benzo(a)pyrene		ug/L
		Indeno(1,2,3-cd)pyrene		ug/L
		Dibenz(a,h)anthracene		ug/L
		Benzo(g,h,i)perylene		ug/L
100016	0001 GGV PERV 1 FRA G- 5	2-Methylnaphthalene		ug/L
-122216	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics		ug/L
	8260 MSV Low Level	Acetone		ug/L
		Benzene		ug/L
		Bromodichloromethane		ug/L
		Bromoform		ug/L
		Bromomethane		ug/L
		2-Butanone (MEK)	2.	ug/L



Analyte List

			Reporting
Customer Sample ID	Method	Compound	Limit Units
		Carbon disulfide	1 ug/L
		Carbon tetrachloride	0.5 ug/L
		Chlorobenzene	0.5 ug/L
		Chloroethane	0.5 ug/L
		Chloroform	0.5 ug/L
		Chloromethane	0.5 ug/L
		1,2-Dibromo-3-chloropropane	0.2 ug/L
		Dibromochloromethane	0.5 ug/L
		1,2-Dibromoethane (EDB)	1 ug/L
		Dichlorodifluoromethane	1 ug/L
		1,1-Dichloroethane	0.5 ug/L
		1,2-Dichloroethane	0.5 ug/L
		1,1-Dichloroethene	0.5 ug/L
		cis-1,2-Dichloroethene	1 ug/L
		trans-1,2-Dichloroethene	0.5 ug/L
		1,2-Dichloropropane	0.5 ug/L
		cis-1,3-Dichloropropene	0.5 ug/L
		trans-1,3-Dichloropropene	0.5 ug/L
		Ethylbenzene	0.5 ug/L
		2-Hexanone	1 ug/L
		Isopropylbenzene (Cumene)	1 ug/L
		Methylene Chloride	0.5 ug/L
		4-Methyl-2-pentanone (MIBK)	1 ug/L
		Methyl-tert-butyl ether	0.5 ug/L
		Styrene	1 ug/L
		1,1,2,2-Tetrachloroethane	0.5 ug/L
		Tetrachloroethene	0.5 ug/L
		Toluene	0.5 ug/L
		1,1,1-Trichloroethane	0.5 ug/L
		1,1,2-Trichloroethane	0.5 ug/L
		Trichloroethene	0.5 ug/L
		Trichlorofluoromethane	0.5 ug/L
		Vinyl chloride	0.5 ug/L
		m&p-Xylene	2 ug/L
		o-Xylene	1 ug/L
		Methyl acetate	2 ug/L





January 16, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 29, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

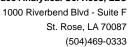
Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047989001	TB-122916	Water	12/29/16 00:00	12/29/16 14:00
2047989002	EB-122916	Water	12/29/16 09:06	12/29/16 14:00
2047989003	MW-86A	Water	12/29/16 09:50	12/29/16 14:00
2047989004	MW-MP5A	Water	12/29/16 10:48	12/29/16 14:00
2047989005	MW-DP5	Water	12/29/16 11:37	12/29/16 14:00
2047989006	FB-122916	Water	12/29/16 11:42	12/29/16 14:00



SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047989001	TB-122916	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989002	EB-122916	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989003	MW-86A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989004	MW-MP5A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989005	MW-DP5	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989006	FB-122916	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

6 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 6020

Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 7470
Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71324

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

6 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71267

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 298069)
 - Carbon disulfide
- LCS (Lab ID: 298395)
 - Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71267

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047993001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 298070)
 - Carbon disulfide
- MSD (Lab ID: 298071)
 - Carbon disulfide

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method:EPA 5030B/8260Description:8260 MSV Low LevelClient:BBL Caribe / Arcadis PRDate:January 16, 2017

Analyte Comments:

QC Batch: 71267

C9: Common Laboratory Contaminant. • EB-122916 (Lab ID: 2047989002)

Acetone

• FB-122916 (Lab ID: 2047989006)

Acetone

• MW-86A (Lab ID: 2047989003)

Acetone

• MW-DP5 (Lab ID: 2047989005)

Acetone

• MW-MP5A (Lab ID: 2047989004)

Acetone

This data package has been reviewed for quality and completeness and is approved for release.



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:10 PM

Sample: TB-122916	Lab ID: 204	7989001	Collected: 12/29/1	6 00:00	Received:	12/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/05/17 04:3	6	
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/05/17 04:3	6 460-00-4	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	142	ug/L	4.0	1		01/04/17 12:4	7 67-64-1	
Benzene	ND	ug/L	0.50	1		01/04/17 12:4	7 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/04/17 12:4	7 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/04/17 12:4	7 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/04/17 12:4	7 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/04/17 12:4	7 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/04/17 12:4	7 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/04/17 12:4	7 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/04/17 12:4	7 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/04/17 12:4	7 75-00-3	
Chloroform	ND	ug/L	0.50	1		01/04/17 12:4		
Chloromethane	ND	ug/L	0.50	1		01/04/17 12:4		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/04/17 12:4		
Dibromochloromethane	ND	ug/L	0.50	1		01/04/17 12:4		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/04/17 12:4		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/04/17 12:4		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/04/17 12:4		
1,2-Dichloroethane	ND ND	ug/L	0.50	1		01/04/17 12:4		
1,1-Dichloroethene	ND ND	_	0.50	1		01/04/17 12:4		
	ND ND	ug/L	1.0	1		01/04/17 12:4		
cis-1,2-Dichloroethene		ug/L						
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/04/17 12:4		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/04/17 12:4		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1			7 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1			7 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/04/17 12:4		
2-Hexanone	ND	ug/L	1.0	1		01/04/17 12:4		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/04/17 12:4		
Methyl acetate	ND	ug/L	2.0	1		01/04/17 12:4		
Methylene Chloride	ND	ug/L	0.50	1		01/04/17 12:4		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/04/17 12:4		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/04/17 12:4		
Styrene	ND	ug/L	1.0	1		01/04/17 12:4	7 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/04/17 12:4	7 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/04/17 12:4		
Toluene	ND	ug/L	0.50	1		01/04/17 12:4		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/04/17 12:4	7 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/04/17 12:4	7 79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/04/17 12:4	7 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/04/17 12:4	7 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/04/17 12:4	7 75-01-4	
n&p-Xylene	ND	ug/L	2.0	1		01/04/17 12:4	7 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/04/17 12:4		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Sample: TB-122916	Lab ID: 204	7989001	Collected: 12/29/1	6 00:00	Received: 12	2/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	102	%.	72-126	1		01/04/17 12:4		
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/04/17 12:4		
oluene-d8 (S)	98	%.	79-119	1		01/04/17 12:4	7 2037-26-5	
Sample: EB-122916	Lab ID: 204	7989002	Collected: 12/29/1	6 09:06	Received: 12	2/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 18:2	1	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/10/17 18:2		
Surrogates n-Pentacosane (S)	36	%.	16-137	1	01/04/17 09:20	01/10/17 18:2	1 629-99-2	
p-Terphenyl (S)	36 41	%. %.	10-137	1		01/10/17 18:2		
8021 GCV BTEX, MTBE, GRO	Analytical Meth		-	'	01/04/17 00.39	01/10/17 10.2	1 04-13-1	
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 05:0	3	
Surrogates	ND	ug/L	30.0	'		01/03/17 03.0	5	
-Bromofluorobenzene (S)	90	%.	44-148	1		01/05/17 05:0	3 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:4	7 7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:4	7 7440-47-3	
_ead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:4	7 7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:4	7 7440-62-2	
020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:4	1 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:4	1 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:4	1 7439-92-1	
anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:4	1 7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:3	3 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:5	0 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:3	8 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:3	8 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:3	8 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:3	8 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:3	8 50-32-8	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Sample: EB-122916	Lab ID:	2047989002	Collected: 12/2	29/16 09:06	Received: 12	2/29/16 14:00 I	Matrix: Water	
Parameters	Results	Units	Report Lim	it DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical I	Method: EPA 8	270 by SIM Prepa	aration Met	nod: EPA 3510			
Benzo(b)fluoranthene	NE) ug/L	0.	10 1	01/04/17 09:09	01/05/17 00:38	205-99-2	
Benzo(g,h,i)perylene	NE) ug/L	0.	10 1	01/04/17 09:09	01/05/17 00:38	191-24-2	
Benzo(k)fluoranthene	NE) ug/L	0.	10 1	01/04/17 09:09	01/05/17 00:38	3 207-08-9	
Chrysene	NE	ug/L	0.	10 1	01/04/17 09:09	01/05/17 00:38	3 218-01-9	
Dibenz(a,h)anthracene	NE	ug/L	0.	10 1	01/04/17 09:09	01/05/17 00:38	53-70-3	
Fluoranthene	NE	ug/L	0.	10 1	01/04/17 09:09	01/05/17 00:38	3 206-44-0	
Fluorene	NE	_	0.	10 1	01/04/17 09:09	01/05/17 00:38	86-73-7	
ndeno(1,2,3-cd)pyrene	NE) ug/L	0.	10 1	01/04/17 09:09	01/05/17 00:38	193-39-5	
2-Methylnaphthalene	NE) ug/L	0.	10 1	01/04/17 09:09	01/05/17 00:38	91-57-6	
Naphthalene	NE	_	0.	10 1	01/04/17 09:09	01/05/17 00:38	91-20-3	
Phenanthrene	NE	_		10 1		01/05/17 00:38		
Pyrene	NE	_		10 1		01/05/17 00:38		
Surrogates		3						
2-Fluorobiphenyl (S)	78	3 %.	25-1	50 1	01/04/17 09:09	01/05/17 00:38	321-60-8	
Terphenyl-d14 (S)	76	6 %.	25-1	50 1	01/04/17 09:09	01/05/17 00:38	3 1718-51-0	
8260 MSV Low Level	Analytical I	Method: EPA 5	030B/8260					
Acetone	30.6	6 ug/L	2	.0 1		01/03/17 16:06	67-64-1	C9
Benzene	NE	J		50 1		01/03/17 16:06		
Bromodichloromethane	NE	_		50 1		01/03/17 16:06		
Bromoform	NE			50 1		01/03/17 16:06		
Bromomethane	NE	J		50 1		01/03/17 16:06		
2-Butanone (MEK)	NE	J		2.0 1		01/03/17 16:06		
Carbon disulfide	NE	J		.0 1		01/03/17 16:06		L3
Carbon tetrachloride	NE	J		50 1		01/03/17 16:06		
Chlorobenzene	NE	_		50 1		01/03/17 16:06		
Chloroethane	NE	J		50 1		01/03/17 16:06		
Chloroform	NE	9		50 1		01/03/17 16:06		
Chloromethane	0.64	J		50 1		01/03/17 16:06		
1,2-Dibromo-3-chloropropane	NE	J		20 1		01/03/17 16:06		
Dibromochloromethane	NE			50 1		01/03/17 16:06		
1,2-Dibromoethane (EDB)	NE	J		.0 1		01/03/17 16:06		
Dichlorodifluoromethane	NE	J		.0 1		01/03/17 16:06		
1,1-Dichloroethane	NE NE	J		.0 1 50 1		01/03/17 16:06		
1.2-Dichloroethane	NE NE	J		50 1		01/03/17 16:06		
,		J						
1,1-Dichloroethene	NE	Ū		50 1		01/03/17 16:06		
cis-1,2-Dichloroethene	NE	Ū		.0 1		01/03/17 16:06		
rans-1,2-Dichloroethene	NE	Ū		50 1		01/03/17 16:06		
I,2-Dichloropropane	NE	ū		50 1		01/03/17 16:06		
cis-1,3-Dichloropropene	NE	Ū		50 1		01/03/17 16:06		
rans-1,3-Dichloropropene	NE	Ū		50 1		01/03/17 16:06		
Ethylbenzene	NE	Ū		50 1		01/03/17 16:06		
2-Hexanone	NE	Ū		.0 1		01/03/17 16:06		
sopropylbenzene (Cumene)	NE	•		.0 1		01/03/17 16:06		
Methyl acetate	NE	Ū		2.0 1		01/03/17 16:06		
Methylene Chloride	NE	Ū		50 1		01/03/17 16:06		
4-Methyl-2-pentanone (MIBK)	NE) ug/L	1	.0 1		01/03/17 16:06	108-10-1	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Sample: EB-122916 Parameters	Lab ID: 2047989002		Collected: 12/29/16 09:06		Received: 12	2/29/16 14:00 I	Matrix: Water	
	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Met	nod: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/03/17 16:06	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 16:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:06	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:06	127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 16:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:06		
Trichloroethene	ND	ug/L	0.50	1		01/03/17 16:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:06		
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 16:06		
m&p-Xylene	ND ND	ug/L	2.0	1		01/03/17 16:06		
o-Xylene	ND ND	ug/L ug/L	1.0	1		01/03/17 16:06		
Surrogates	שוו	ug/L	1.0	'		01/03/17 10.00	33-41-0	
Dibromofluoromethane (S)	114	%.	72-126	1		01/03/17 16:06	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/03/17 16:06		
Toluene-d8 (S)	100	%.	79-119	1		01/03/17 16:06		
, ,								
Sample: MW-86A	Lab ID: 204	7989003	Collected: 12/29/1	6 09:50	Received: 12	2/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 80)15B Modified Prepa	ration Me	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 18:49)	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/10/17 18:49		
Surrogates	ND	1119/ =	1.0	•	01/04/17 00:00	01/10/11 10.40		
n-Pentacosane (S)	49	%.	16-137	1	01/04/17 09:30	04/40/47 40:40		
p-Terphenyl (S)	57					01/10/17 16:49	629-99-2	
o respiration (G)		%		1			629-99-2 84-15-1	
2021 GCV RTEY MTRE GRO	_	%. hod: FPA 80	10-121	1		01/10/17 18:49		
•	Analytical Met	nod: EPA 80	10-121			01/10/17 18:49	84-15-1	
Gasoline Range Organics Surrogates	Analytical Met	nod: EPA 80 ug/L	10-121 015/8021 50.0	1		01/10/17 18:49 01/05/17 05:28	84-15-1	
Gasoline Range Organics Surrogates	Analytical Met ND 89	hod: EPA 80 ug/L %.	10-121 015/8021 50.0 44-148	1	01/04/17 08:39	01/10/17 18:49	84-15-1	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	Analytical Met ND 89	ug/L %. hod: EPA 60	10-121 015/8021 50.0 44-148 020 Preparation Meth	1 1 nod: EPA	01/04/17 08:39	01/10/17 18:49 01/05/17 05:28 01/05/17 05:28	84-15-1 8 8 460-00-4	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS	Analytical Met ND 89	hod: EPA 80 ug/L %.	10-121 015/8021 50.0 44-148	1 1 nod: EPA	01/04/17 08:39	01/10/17 18:49 01/05/17 05:28	84-15-1 8 8 460-00-4	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic	Analytical Met ND 89 Analytical Met	ug/L %. hod: EPA 60	10-121 015/8021 50.0 44-148 020 Preparation Meth	1 1 nod: EPA	01/04/17 08:39 3010 12/30/16 16:10	01/10/17 18:49 01/05/17 05:28 01/05/17 05:28	84-15-1 460-00-4 7440-38-2	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium	Analytical Met ND 89 Analytical Met ND	ug/L %. hod: EPA 60 mg/L	10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010	1 1 nod: EPA 1	01/04/17 08:39 3010 12/30/16 16:10 12/30/16 16:10	01/10/17 18:49 01/05/17 05:28 01/05/17 05:28 01/06/17 13:51	7440-38-2 7440-47-3	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead	Analytical Met ND 89 Analytical Met ND ND	ug/L %. hod: EPA 60 mg/L mg/L	10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010	1 1 nod: EPA 1 1	01/04/17 08:39 3010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10	01/10/17 18:49 01/05/17 05:28 01/05/17 05:28 01/06/17 13:51 01/06/17 13:51	7440-38-2 7440-47-3 7439-92-1	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium	Analytical Met ND 89 Analytical Met ND ND ND ND ND ND	ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L	10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010	1 1 nod: EPA 1 1 1	3010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10	01/10/17 18:49 01/05/17 05:28 01/05/17 05:28 01/06/17 13:51 01/06/17 13:51 01/06/17 13:51	7440-38-2 7440-47-3 7439-92-1	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	Analytical Met ND 89 Analytical Met ND ND ND ND ND ND	ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010 0.0050	1 1 nod: EPA 1 1 1	.3010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 3005A	01/10/17 18:49 01/05/17 05:28 01/05/17 05:28 01/06/17 13:51 01/06/17 13:51 01/06/17 13:51	7440-38-2 7440-47-3 7440-62-2	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Analytical Met ND 89 Analytical Met ND ND ND ND ND Analytical Met	nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60 ug/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 nod: EPA 1 1 1 1 nod: EPA	01/04/17 08:39 .3010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 .3005A 12/30/16 18:15	01/10/17 18:49 01/05/17 05:28 01/05/17 05:28 01/06/17 13:51 01/06/17 13:51 01/06/17 13:51	7440-38-2 7440-47-3 7440-62-2 7440-38-2	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved Lead, Dissolved	Analytical Met ND 89 Analytical Met ND ND ND ND ND ND Analytical Met	ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth 1.0	1 1 nod: EPA 1 1 1 1 nod: EPA	3010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 3005A 12/30/16 18:15 12/30/16 18:15	01/10/17 18:49 01/05/17 05:28 01/05/17 05:28 01/06/17 13:51 01/06/17 13:51 01/06/17 13:51 01/06/17 15:45	7440-38-2 7440-47-3 7440-62-2 7440-38-2 7440-38-2 7440-47-3	



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:10 PM

Sample: MW-86A	Lab ID: 204	7000002	Collected: 12/29/1	6.00:50	Received: 12	2/20/16 14:00	Matrix: Water	
Sample: IVIVV-00A		7909003						
Parameters	Results —	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:3	5 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:5	2 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Metl	nod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:5	8 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:5	8 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:5	8 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09			
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09		-	
Chrysene	ND ND	•	0.10	1	01/04/17 09:09			
		ug/L			01/04/17 09:09			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1				
luoranthene	ND	ug/L	0.10	1	01/04/17 09:09			
luorene	ND	ug/L	0.10	1	01/04/17 09:09			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/04/17 09:09			
-Methylnaphthalene	ND	ug/L	0.10	1	01/04/17 09:09			
laphthalene	ND	ug/L	0.10	1	01/04/17 09:09			
Phenanthrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:5	8 85-01-8	
Pyrene	0.13	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:5	8 129-00-0	
Surrogates								
?-Fluorobiphenyl (S)	77	%.	25-150	1	01/04/17 09:09	01/05/17 00:5	321-60-8	
erphenyl-d14 (S)	74	%.	25-150	1	01/04/17 09:09	01/05/17 00:5	8 1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
cetone	16.8	ug/L	4.0	1		01/03/17 16:24	4 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 16:2	4 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 16:2	4 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 16:2	4 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:2	4 74-83-9	
P-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:2	4 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:2	4 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:2		
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:2		
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:2		
Chloroform	ND	ug/L	0.50	1		01/03/17 16:24		
Chloromethane	ND	ug/L	0.50	1		01/03/17 16:24		
,2-Dibromo-3-chloropropane	ND ND	ug/L ug/L	0.20	1		01/03/17 16:2		
		_						
Dibromochloromethane	ND ND	ug/L	0.50	1		01/03/17 16:2		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 16:2		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 16:2		
,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:2		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:2	4 107-06-2	

REPORT OF LABORATORY ANALYSIS



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Sample: MW-86A	Lab ID: 204	7989003	Collected: 12/29/1	6 09:50	Received: 12	2/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:24	1 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 16:24	1 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 16:24	1 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:24	1 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:24	1 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 16:24	1 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/03/17 16:24	1 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 16:24	1 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/03/17 16:24	1 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 16:24		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 16:24		
Methyl-tert-butyl ether	1.1	ug/L	0.50	1		01/03/17 16:24		
Styrene	ND	ug/L	1.0	1		01/03/17 16:24		
1,1,2,2-Tetrachloroethane	ND ND	ug/L	0.50	1		01/03/17 16:24		
Tetrachloroethene	ND ND	ug/L	0.50	1		01/03/17 16:24		
Toluene	ND ND	ug/L ug/L	0.50	1		01/03/17 16:24	_	
1,1,1-Trichloroethane	ND ND	-	0.50	1		01/03/17 16:24		
• •		ug/L						
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:24		
Trichloroethene	ND	ug/L	0.50	1		01/03/17 16:24		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:24		
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 16:24		
m&p-Xylene	ND	ug/L	2.0	1			179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/03/17 16:24	1 95-47-6	
Surrogates	440	0.4	70.400			04/00/47 40 0	= . =	
Dibromofluoromethane (S)	116	%.	72-126	1		01/03/17 16:24		
4-Bromofluorobenzene (S)	95	%.	68-124	1		01/03/17 16:24		
Toluene-d8 (S)	103	%.	79-119	1		01/03/17 16:24	1 2037-26-5	
Sample: MW-MP5A	Lab ID: 204	7989004	Collected: 12/29/1	6 10:48	Received: 12	2/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Metl	nod: EPA 80	D15B Modified Prepa	ration M	ethod: EPA 353	 5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 19:17	7	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/10/17 19:17		
Surrogates		······································		•		3		
n-Pentacosane (S)	33	%.	16-137	1	01/04/17 08:39	01/10/17 19:17	629-99-2	
o-Terphenyl (S)	42	%.	10-121	1		01/10/17 19:17		
8021 GCV BTEX, MTBE, GRO	Analytical Meth							
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 05:55	5	
	110	~g/ _	00.0			3 1, 00, 11 00.00	•	
Surrogates								



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Sample: MW-MP5A	Lab ID: 204	7989004	Collected: 12/29/	16 10:48	Received: 12	2/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Met	hod: EPA	3010			
Arsenic	0.0070	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:5	5 7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:5	5 7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:5	5 7439-92-1	
√anadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:5	5 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	5.2	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:4	9 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:4	9 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:4	9 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:4	9 7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Met	hod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:3	7 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Met	hod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:5	8 7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Prepara	tion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 83-32-9	
cenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 208-96-8	
nthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 120-12-7	
Senzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 56-55-3	
enzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 50-32-8	
Senzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 191-24-2	
Senzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 207-08-9	
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 53-70-3	
luoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 206-44-0	
luorene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 193-39-5	
-Methylnaphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:1	7 91-57-6	
laphthalene	ND	ug/L	0.10	1		01/05/17 01:1		
Phenanthrene	ND	ug/L	0.10	1		01/05/17 01:1		
Pyrene	ND	ug/L	0.10	1		01/05/17 01:1		
Surrogates	110	~y/ -	5.10	•	2.,0.,7, 00.00	2.700, 17 07.1		
2-Fluorobiphenyl (S)	82	%.	25-150	1	01/04/17 09:09	01/05/17 01:1	7 321-60-8	
erphenyl-d14 (S)	79	%.	25-150	1		01/05/17 01:1		
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	7.9	ug/L	4.0	1		01/03/17 16:4	2 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 16:4	2 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 16:4	2 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 16:4		
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:4:		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:4:		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Sample: MW-MP5A	Lab ID: 204	7989004	Collected: 12/29/1	6 10:48	Received:	12/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:42	2 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:42	2 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:42	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:42	2 75-00-3	
Chloroform	ND	ug/L	0.50	1		01/03/17 16:42	2 67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/03/17 16:42	2 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 16:42	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 16:42	2 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 16:42	2 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 16:42	2 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:42	2 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:42	2 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:42	2 75-35-4	
cis-1,2-Dichloroethene	1.0	ug/L	1.0	1		01/03/17 16:42	2 156-59-2	
rans-1,2-Dichloroethene	0.90	ug/L	0.50	1		01/03/17 16:42	2 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 16:42	2 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:42	2 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:42	2 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 16:42	2 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/03/17 16:42	2 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 16:42	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/03/17 16:42		
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 16:42	2 75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 16:42		
Methyl-tert-butyl ether	2.5	ug/L	0.50	1		01/03/17 16:42		
Styrene	ND	ug/L	1.0	1		01/03/17 16:42		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:42	2 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:42	2 127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 16:42	2 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:42	2 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:42		
Trichloroethene	0.64	ug/L	0.50	1		01/03/17 16:42		
Frichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:42	2 75-69-4	
/inyl chloride	ND	ug/L	0.50	1		01/03/17 16:42		
m&p-Xylene	ND	ug/L	2.0	1			2 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/03/17 16:42		
Surrogates	_	- 3						
Dibromofluoromethane (S)	116	%.	72-126	1		01/03/17 16:42	1868-53-7	
1-Bromofluorobenzene (S)	100	%.	68-124	1		01/03/17 16:42	2 460-00-4	
Toluene-d8 (S)	102	%.	79-119	1		01/03/17 16:42	2 2037-26-5	



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:10 PM

Sample: MW-DP5	Lab ID: 204	7989005	Collected: 12/29/1	6 11:37	Received: 12	2/29/16 14:00 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 19:44	ļ	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 19:44	ļ	
n-Pentacosane (S)	33	%.	16-137	1	01/04/17 08:39	01/10/17 19:44	629-99-2	
p-Terphenyl (S)	39	%.	10-121	1		01/10/17 19:44		
3021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	15/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/05/17 06:22	2	
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/05/17 06:22	2 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7440-47-3	
_ead	ND	mg/L	0.0010	1		01/06/17 14:07		
/anadium	ND	mg/L	0.0050	1		01/06/17 14:07		
		•				01/00/11 11.0/	7 7 10 02 2	
6020 MET ICPMS, Dissolved (LF)	Analytical Metr	100: EPA 60	20 Preparation Meth	ioa: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	3 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	3 7440-47-3	
∟ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:53	3 7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:39	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:00	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	70 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	7 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/05/17 01:37		
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/05/17 01:37		
Fluoranthene	ND	ug/L	0.10	1		01/05/17 01:37		
Fluorene	ND	ug/L	0.10	1		01/05/17 01:37		
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/05/17 01:37		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/05/17 01:37		
	ND	ug/L	0.10					
Naphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:27	7 01-20-3	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Sample: MW-DP5	Lab ID: 204	7989005	Collected: 12/29/1	6 11:37	Received: 12	2/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	7 129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	75	%.	25-150	1	01/04/17 09:09	01/05/17 01:37	7 321-60-8	
Terphenyl-d14 (S)	71	%.	25-150	1	01/04/17 09:09	01/05/17 01:37	7 1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	12.0	ug/L	4.0	1		01/03/17 16:59	9 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 16:59	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 16:59	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 16:59	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:59	9 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:59	9 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:59		-
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:59		
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:59		
Chloroform	ND	ug/L	0.50	1		01/03/17 16:59		
Chloromethane	ND	ug/L	0.50	1		01/03/17 16:59		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 16:59		
Dibromochloromethane	ND ND	ug/L	0.50	1		01/03/17 16:59		
1,2-Dibromoethane (EDB)	ND ND	-	1.0	1		01/03/17 16:59		
Dichlorodifluoromethane	ND ND	ug/L	1.0	1		01/03/17 16:59		
		ug/L	0.50					
,1-Dichloroethane	ND	ug/L		1		01/03/17 16:59		
I,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:59		
I,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:59		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 16:59		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:59		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 16:59		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:59		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:59		
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 16:59	9 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/03/17 16:59	9 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 16:59	9 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/03/17 16:59	9 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 16:59	75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 16:59	9 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/03/17 16:59	9 1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 16:59	9 100-42-5	
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:59	9 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:59		
Toluene	ND	ug/L	0.50	1		01/03/17 16:59		
I,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:59		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:59		
richloroethene	ND	ug/L	0.50	1		01/03/17 16:59		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:59		
/inyl chloride	ND	ug/L	0.50	1		01/03/17 16:59		
m&p-Xylene	ND ND	ug/L ug/L	2.0	1		01/03/17 16:59		



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:10 PM

Complex MW DDF	Lab ID: 004	7000005	Collected: 40/00/	16 44:07	Dooshirad	10/00/16 11:00	Matrix: \Matrix	
Sample: MW-DP5	Lab ID: 2047	7989005	Collected: 12/29/1	16 11:37	Received:	12/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	od: EPA 5	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		01/03/17 16:59	9 95-47-6	
Dibromofluoromethane (S)	113	%.	72-126	1		01/03/17 16:59	9 1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/03/17 16:59	9 460-00-4	
Toluene-d8 (S)	102	%.	79-119	1		01/03/17 16:59	9 2037-26-5	
Sample: FB-122916	Lab ID: 2047	7989006	Collected: 12/29/1	16 11:42	Received:	12/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 8	015/8021			•	•	
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/05/17 06:49	e	
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/05/17 06:49	9 460-00-4	
8260 MSV Low Level	Analytical Meth	od: EPA 5	030B/8260					
Acetone	27.3	ug/L	4.0	1		01/03/17 17:17	7 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 17:17	7 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 17:17	7 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 17:17	7 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 17:17	7 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 17:17	7 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 17:17	7 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 17:17	7 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 17:17	7 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/03/17 17:17	7 75-00-3	
Chloroform	ND	ug/L	0.50	1		01/03/17 17:17	7 67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/03/17 17:17	7 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 17:17	7 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 17:17	7 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 17:17	7 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 17:17	7 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 17:17	7 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 17:17	7 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 17:17	7 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 17:17	7 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 17:17	7 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 17:17	7 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 17:17	7 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 17:17	7 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 17:17	7 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/03/17 17:17	7 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 17:17	7 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/03/17 17:17	7 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 17:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 17:17	7 108-10-1	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Sample: FB-122916	Lab ID: 204	7989006	Collected: 12/29/1	6 11:42	Received: 12/29/16 14:00	Matrix: Water
Parameters	Results	Units	Report Limit	DF	Prepared Analyzed	CAS No. Qu
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260			
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/03/17 17:1	7 1634-04-4
Styrene	ND	ug/L	1.0	1	01/03/17 17:1	7 100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/03/17 17:1	7 79-34-5
Tetrachloroethene	ND	ug/L	0.50	1	01/03/17 17:1	7 127-18-4
Toluene	ND	ug/L	0.50	1	01/03/17 17:1	7 108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/03/17 17:1	7 71-55-6
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/03/17 17:1	7 79-00-5
Trichloroethene	ND	ug/L	0.50	1	01/03/17 17:1	7 79-01-6
Trichlorofluoromethane	ND	ug/L	0.50	1	01/03/17 17:1	7 75-69-4
Vinyl chloride	ND	ug/L	0.50	1	01/03/17 17:1	7 75-01-4
m&p-Xylene	ND	ug/L	2.0	1	01/03/17 17:1	7 179601-23-1
o-Xylene	ND	ug/L	1.0	1	01/03/17 17:1	7 95-47-6
Surrogates						
Dibromofluoromethane (S)	116	%.	72-126	1	01/03/17 17:1	7 1868-53-7
4-Bromofluorobenzene (S)	98	%.	68-124	1	01/03/17 17:1	7 460-00-4
Toluene-d8 (S)	103	%.	79-119	1	01/03/17 17:1	7 2037-26-5



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

QC Batch: 71377 Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

METHOD BLANK: 298565 Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Blank Reporting Limit Qualifiers Parameter Units Result Analyzed Gasoline Range Organics ND 01/05/17 03:16 ug/L 50.0 4-Bromofluorobenzene (S) 89 44-148 01/05/17 03:16 %.

METHOD BLANK: 298931 Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers Gasoline Range Organics ND 50.0 01/05/17 20:19 ug/L 4-Bromofluorobenzene (S) 89 44-148 01/05/17 20:19 %.

METHOD BLANK: 299195 Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers Gasoline Range Organics ND 01/06/17 12:25 ug/L 50.0 4-Bromofluorobenzene (S) 90 01/06/17 12:25 %. 44-148

LABORATORY CONTROL SAMPLE: 298566

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	454	91	61-136	
4-Bromofluorobenzene (S)	%.			89	44-148	
4-Bromofluorobenzene (S)	%.			90	44-148	

LABORATORY CONTROL SAMPLE: 298932

Date: 01/16/2017 01:10 PM

_		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Gasoline Range Organics	ug/L	500	467	93	61-136	
4-Bromofluorobenzene (S)	%.			91	44-148	
4-Bromofluorobenzene (S)	%.			92	44-148	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

%.

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Pace Project No.: 2047989

4-Bromofluorobenzene (S)

4-Bromofluorobenzene (S)

Date: 01/16/2017 01:10 PM

LABORATORY CONTROL SAI	MPLE: 29	99196										
			Spike	LCS		LCS	% Red					
Parameter		Units	Conc.	Resu	lt	% Rec	Limits	Q	ualifiers	_		
Gasoline Range Organics		ug/L	500		472	94	61	-136		_		
4-Bromofluorobenzene (S)		%.				90	44	-148				
4-Bromofluorobenzene (S)		%.				90	44	-148				
MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 298856	6		298857							
MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 298850	6 MS	MSD								
MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 298850 2047989003		MSD Spike	298857 MS	MSD	MS	MSD	% Rec		Max	
MATRIX SPIKE & MATRIX SPI	KE DUPLIO		MS	_		MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD		Qual
Parameter		2047989003	MS Spike	Spike	MS	_	_	_	Limits	RPD 1		Qual
	Units	2047989003 Result	MS Spike Conc.	Spike Conc.	MS Result	Result	% Rec	% Rec	Limits	1	RPD	Qual

95

93

44-148

44-148

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

QC Batch: 71210 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297858 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 01/03/17 13:02

LABORATORY CONTROL SAMPLE: 297859

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury ug/L 1.0 101 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297860 297861

MS MSD 2047949001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual ND 1 1.0 75-125 0 20 Mercury ug/L 1 1.0 100 100

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

QC Batch: 71229 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297980 Matrix: Water Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury, Dissolved ug/L ND 0.20 01/03/17 12:08

LABORATORY CONTROL SAMPLE: 297981

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury, Dissolved ug/L 1.1 106 80-120

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

QC Batch: 71212 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297866 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND ND	0.0010	01/06/17 10:19	
Chromium	mg/L	ND	0.0010	01/06/17 10:19	
Lead	mg/L	ND	0.0010	01/06/17 10:19	
Vanadium	mg/L	ND	0.0050	01/06/17 10:19	

LABORATORY CONTROL SAMPLE: 297867 LCS LCS Spike % Rec Parameter Conc. Result % Rec Limits Qualifiers Units Arsenic mg/L .02 0.020 100 83-115 Chromium mg/L .02 0.020 99 85-115 Lead mg/L .02 0.019 96 84-115 Vanadium mg/L .02 0.019 97 81-115

MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 29786		297869								
Parameter	Units	2047967004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	RPD	Max	Qual
Parameter	Units	— Result	Conc.	Conc.	Result	Resuit	% Kec	% Rec	Limits	KPD	KPD	Quai
Arsenic	mg/L	ND	.02	.02	0.018	0.019	88	91	80-120	3	20	
Chromium	mg/L	0.024	.02	.02	0.042	0.044	91	100	80-120	4	20	
Lead	mg/L	ND	.02	.02	0.020	0.021	100	103	80-120	3	20	
Vanadium	mg/L	ND	.02	.02	0.020	0.021	95	100	80-120	5	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

QC Batch: 71231 Analysis Method: EPA 6020

QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297988 Matrix: Water Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Chromium, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Lead, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Vanadium, Dissolved	ug/L	ND	5.0	01/06/17 10:26	

LABORATORY CONTROL SAMPLE: 297989 LCS LCS Spike % Rec Parameter Conc. Result % Rec Limits Qualifiers Units Arsenic. Dissolved ug/L 20 19.8 99 80-120 Chromium, Dissolved ug/L 20 19.7 98 80-120 Lead, Dissolved ug/L 20 19.0 95 80-120 Vanadium, Dissolved ug/L 20 19.5 97 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299026 299027												
Parameter	Units	2047967002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	RPD	Max	Qual
- arameter			COIIC.	COIIC.	rtesuit	Nesuit	70 IXEC	70 IXEC				Quai
Arsenic, Dissolved	ug/L	ND	20	20	19.2	19.1	96	95	75-125	1	20	
Chromium, Dissolved	ug/L	ND	20	20	19.2	19.2	95	96	75-125	0	20	
Lead, Dissolved	ug/L	ND	20	20	18.8	18.9	94	95	75-125	1	20	
Vanadium, Dissolved	ug/L	ND	20	20	20.6	20.8	92	93	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

 QC Batch:
 71267
 Analysis Method:
 EPA 5030B/8260

 QC Batch Method:
 EPA 5030B/8260
 Analysis Description:
 8260 MSV Low Level

 Associated Lab Samples:
 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

METHOD BLANK: 298068 Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

·	,	Blank	Reporting	,	
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1-Dichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1-Dichloroethene	ug/L	ND	0.50	01/03/17 10:46	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/03/17 10:46	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/03/17 10:46	
1,2-Dichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,2-Dichloropropane	ug/L	ND	0.50	01/03/17 10:46	
2-Butanone (MEK)	ug/L	ND	2.0	01/03/17 10:46	
2-Hexanone	ug/L	ND	1.0	01/03/17 10:46	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/03/17 10:46	
Acetone	ug/L	ND	4.0	01/03/17 10:46	
Benzene	ug/L	ND	0.50	01/03/17 10:46	
Bromodichloromethane	ug/L	ND	0.50	01/03/17 10:46	
Bromoform	ug/L	ND	0.50	01/03/17 10:46	
Bromomethane	ug/L	ND	0.50	01/03/17 10:46	
Carbon disulfide	ug/L	ND	1.0	01/03/17 10:46	
Carbon tetrachloride	ug/L	ND	0.50	01/03/17 10:46	
Chlorobenzene	ug/L	ND	0.50	01/03/17 10:46	
Chloroethane	ug/L	ND	0.50	01/03/17 10:46	
Chloroform	ug/L	ND	0.50	01/03/17 10:46	
Chloromethane	ug/L	ND	0.50	01/03/17 10:46	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/03/17 10:46	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/03/17 10:46	
Dibromochloromethane	ug/L	ND	0.50	01/03/17 10:46	
Dichlorodifluoromethane	ug/L	ND	1.0	01/03/17 10:46	
Ethylbenzene	ug/L	ND	0.50	01/03/17 10:46	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/03/17 10:46	
m&p-Xylene	ug/L	ND	2.0	01/03/17 10:46	
Methyl acetate	ug/L	ND	2.0	01/03/17 10:46	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/03/17 10:46	
Methylene Chloride	ug/L	ND	0.50	01/03/17 10:46	
o-Xylene	ug/L	ND	1.0	01/03/17 10:46	
Styrene	ug/L	ND	1.0	01/03/17 10:46	
Tetrachloroethene	ug/L	ND	0.50	01/03/17 10:46	
Toluene	ug/L	ND	0.50	01/03/17 10:46	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/03/17 10:46	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/03/17 10:46	
Trichloroethene	ug/L	ND	0.50	01/03/17 10:46	
Trichlorofluoromethane	ug/L	ND	0.50	01/03/17 10:46	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

METHOD BLANK: 298068 Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	0.50	01/03/17 10:46	
4-Bromofluorobenzene (S)	%.	98	68-124	01/03/17 10:46	
Dibromofluoromethane (S)	%.	102	72-126	01/03/17 10:46	
Toluene-d8 (S)	%.	100	79-119	01/03/17 10:46	

METHOD BLANK: 298394 Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

		Blank	Reporting	•	
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1-Dichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1-Dichloroethene	ug/L	ND	0.50	01/04/17 10:25	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/04/17 10:25	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/04/17 10:25	
1,2-Dichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,2-Dichloropropane	ug/L	ND	0.50	01/04/17 10:25	
2-Butanone (MEK)	ug/L	ND	2.0	01/04/17 10:25	
2-Hexanone	ug/L	ND	1.0	01/04/17 10:25	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/04/17 10:25	
Acetone	ug/L	ND	4.0	01/04/17 10:25	
Benzene	ug/L	ND	0.50	01/04/17 10:25	
Bromodichloromethane	ug/L	ND	0.50	01/04/17 10:25	
Bromoform	ug/L	ND	0.50	01/04/17 10:25	
Bromomethane	ug/L	ND	0.50	01/04/17 10:25	
Carbon disulfide	ug/L	ND	1.0	01/04/17 10:25	
Carbon tetrachloride	ug/L	ND	0.50	01/04/17 10:25	
Chlorobenzene	ug/L	ND	0.50	01/04/17 10:25	
Chloroethane	ug/L	ND	0.50	01/04/17 10:25	
Chloroform	ug/L	ND	0.50	01/04/17 10:25	
Chloromethane	ug/L	ND	0.50	01/04/17 10:25	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/04/17 10:25	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/04/17 10:25	
Dibromochloromethane	ug/L	ND	0.50	01/04/17 10:25	
Dichlorodifluoromethane	ug/L	ND	1.0	01/04/17 10:25	
Ethylbenzene	ug/L	ND	0.50	01/04/17 10:25	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/04/17 10:25	
m&p-Xylene	ug/L	ND	2.0	01/04/17 10:25	
Methyl acetate	ug/L	ND	2.0	01/04/17 10:25	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/04/17 10:25	
Methylene Chloride	ug/L	ND	0.50	01/04/17 10:25	
o-Xylene	ug/L	ND	1.0	01/04/17 10:25	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

METHOD BLANK: 298394 Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Styrene	ug/L	ND ND	1.0	01/04/17 10:25	
Tetrachloroethene	ug/L	ND	0.50	01/04/17 10:25	
Toluene	ug/L	ND	0.50	01/04/17 10:25	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/04/17 10:25	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/04/17 10:25	
Trichloroethene	ug/L	ND	0.50	01/04/17 10:25	
Trichlorofluoromethane	ug/L	ND	0.50	01/04/17 10:25	
Vinyl chloride	ug/L	ND	0.50	01/04/17 10:25	
4-Bromofluorobenzene (S)	%.	98	68-124	01/04/17 10:25	
Dibromofluoromethane (S)	%.	102	72-126	01/04/17 10:25	
Toluene-d8 (S)	%.	100	79-119	01/04/17 10:25	

LABORATORY CONTROL SAMPLE:	298069					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	56.2	112	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	45.9	92	15-179	
1,1,2-Trichloroethane	ug/L	50	47.0	94	58-144	
1,1-Dichloroethane	ug/L	50	55.0	110	63-129	
1,1-Dichloroethene	ug/L	50	54.7	109	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	46.0	92	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	48.6	97	52-161	
1,2-Dichloroethane	ug/L	50	49.5	99	57-148	
1,2-Dichloropropane	ug/L	50	50.7	101	66-128	
2-Butanone (MEK)	ug/L	50	53.6	107	32-183	
2-Hexanone	ug/L	50	45.0	90	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	46.1	92	26-171	
Acetone	ug/L	50	51.2	102	22-165	
Benzene	ug/L	50	54.3	109	62-131	
Bromodichloromethane	ug/L	50	47.3	95	69-132	
Bromoform	ug/L	50	41.3	83	35-166	
Bromomethane	ug/L	50	45.5	91	34-158	
Carbon disulfide	ug/L	50	68.3	137	31-128 L	_0
Carbon tetrachloride	ug/L	50	51.8	104	54-144	
Chlorobenzene	ug/L	50	48.5	97	70-127	
Chloroethane	ug/L	50	40.1	80	17-195	
Chloroform	ug/L	50	51.3	103	73-134	
Chloromethane	ug/L	50	58.8	118	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.3	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	50.8	102	72-138	
Dibromochloromethane	ug/L	50	43.8	88	49-146	
Dichlorodifluoromethane	ug/L	50	55.1	110	10-179	
Ethylbenzene	ug/L	50	47.2	94	66-126	
Isopropylbenzene (Cumene)	ug/L	50	47.9	96	51-138	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

ABORATORY CONTROL SAMPLE:	298069					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
n&p-Xylene	ug/L	100	94.3	94	65-129	
ethyl acetate	ug/L	50	52.1	104	20-142	
hyl-tert-butyl ether	ug/L	50	50.4	101	37-166	
thylene Chloride	ug/L	50	53.9	108	46-168	
ylene	ug/L	50	46.7	93	65-124	
rene	ug/L	50	48.1	96	72-133	
achloroethene	ug/L	50	47.8	96	46-157	
ene	ug/L	50	51.4	103	69-126	
s-1,2-Dichloroethene	ug/L	50	54.0	108	60-129	
s-1,3-Dichloropropene	ug/L	50	50.2	100	59-149	
nloroethene	ug/L	50	52.7	105	67-132	
hlorofluoromethane	ug/L	50	57.3	115	39-171	
/l chloride	ug/L	50	44.9	90	27-149	
romofluorobenzene (S)	%.			99	68-124	
omofluoromethane (S)	%.			109	72-126	
uene-d8 (S)	%.			102	79-119	

LABORATORY CONTROL SAMPLE:	298395					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.9	108	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	51.8	104	15-179	
1,1,2-Trichloroethane	ug/L	50	46.9	94	58-144	
1,1-Dichloroethane	ug/L	50	54.0	108	63-129	
1,1-Dichloroethene	ug/L	50	53.6	107	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	49.0	98	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	50.2	100	52-161	
1,2-Dichloroethane	ug/L	50	50.9	102	57-148	
1,2-Dichloropropane	ug/L	50	51.6	103	66-128	
2-Butanone (MEK)	ug/L	50	53.2	106	32-183	
2-Hexanone	ug/L	50	46.3	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	49.9	100	26-171	
Acetone	ug/L	50	51.6	103	22-165	
Benzene	ug/L	50	54.6	109	62-131	
Bromodichloromethane	ug/L	50	47.8	96	69-132	
Bromoform	ug/L	50	44.3	89	35-166	
Bromomethane	ug/L	50	45.3	91	34-158	
Carbon disulfide	ug/L	50	67.4	135	31-128 L	.0
Carbon tetrachloride	ug/L	50	51.7	103	54-144	
Chlorobenzene	ug/L	50	51.2	102	70-127	
Chloroethane	ug/L	50	38.2	76	17-195	
Chloroform	ug/L	50	50.0	100	73-134	
Chloromethane	ug/L	50	59.1	118	17-153	
cis-1,2-Dichloroethene	ug/L	50	52.1	104	68-129	
cis-1,3-Dichloropropene	ug/L	50	52.2	104	72-138	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

BORATORY CONTROL SAMPLE:	298395					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
bromochloromethane	ug/L	50	47.1	94	49-146	
hlorodifluoromethane	ug/L	50	54.4	109	10-179	
/lbenzene	ug/L	50	50.1	100	66-126	
ropylbenzene (Cumene)	ug/L	50	51.6	103	51-138	
o-Xylene	ug/L	100	100	100	65-129	
hyl acetate	ug/L	50	50.3	101	20-142	
hyl-tert-butyl ether	ug/L	50	48.7	97	37-166	
nylene Chloride	ug/L	50	52.8	106	46-168	
lene	ug/L	50	48.7	97	65-124	
ne	ug/L	50	50.6	101	72-133	
chloroethene	ug/L	50	50.6	101	46-157	
ene	ug/L	50	52.2	104	69-126	
s-1,2-Dichloroethene	ug/L	50	53.0	106	60-129	
s-1,3-Dichloropropene	ug/L	50	52.3	105	59-149	
hloroethene	ug/L	50	52.4	105	67-132	
hlorofluoromethane	ug/L	50	54.3	109	39-171	
l chloride	ug/L	50	43.9	88	27-149	
omofluorobenzene (S)	%.			98	68-124	
omofluoromethane (S)	%.			104	72-126	
ene-d8 (S)	%.			101	79-119	

MATRIX SPIKE & MATRIX SPI	298071											
			MS	MSD								
		2047993001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	66.6	61.9	133	124	54-137	7	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	53.3	49.7	107	99	15-187	7	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	53.2	50.5	106	101	59-148	5	20	
1,1-Dichloroethane	ug/L	ND	50	50	64.1	60.8	128	122	59-133	5	20	
1,1-Dichloroethene	ug/L	ND	50	50	64.9	63.5	130	127	44-146	2	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	53.1	49.1	106	98	23-166	8	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	56.0	53.7	112	107	55-166	4	20	
1,2-Dichloroethane	ug/L	ND	50	50	57.3	55.0	115	110	56-154	4	20	
1,2-Dichloropropane	ug/L	ND	50	50	58.6	56.7	117	113	62-135	3	20	
2-Butanone (MEK)	ug/L	ND	50	50	63.4	59.2	127	118	20-205	7	20	
2-Hexanone	ug/L	ND	50	50	52.4	50.3	105	101	25-189	4	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	52.6	49.9	105	100	23-184	5	20	
Acetone	ug/L	36.2	50	50	75.8	73.3	79	74	11-217	3	20	
Benzene	ug/L	ND	50	50	61.8	60.1	124	120	52-141	3	20	
Bromodichloromethane	ug/L	ND	50	50	54.7	52.4	109	105	70-134	4	20	
Bromoform	ug/L	ND	50	50	46.8	44.7	94	89	37-171	5	20	
Bromomethane	ug/L	ND	50	50	55.4	46.7	111	93	34-155	17	20	
Carbon disulfide	ug/L	ND	50	50	87.9	77.9	175	155	28-130	12	20	M0
Carbon tetrachloride	ug/L	ND	50	50	62.8	59.2	126	118	48-146	6	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

MATRIX SPIKE & MATRIX SPII		ATE: 29807	MS	MSD	298071							
		2047993001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chlorobenzene	ug/L	ND	50	50	55.4	53.8	111	108	67-129	3	20	
Chloroethane	ug/L	ND	50	50	50.5	44.1	101	88	12-192	14	20	
Chloroform	ug/L	ND	50	50	59.4	56.5	119	113	66-143	5	20	
Chloromethane	ug/L	0.54	50	50	67.1	62.4	133	124	14-155	7	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.7	58.6	123	117	56-141	5	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	57.9	54.9	116	110	70-139	5	20	
Dibromochloromethane	ug/L	ND	50	50	49.7	47.2	99	94	50-150	5	20	
Dichlorodifluoromethane	ug/L	ND	50	50	66.1	63.6	132	127	10-173	4	20	
Ethylbenzene	ug/L	ND	50	50	53.8	52.5	108	105	57-135	2	20	
sopropylbenzene (Cumene)	ug/L	ND	50	50	55.9	55.7	111	110	40-146	0	20	
m&p-Xylene	ug/L	ND	100	100	109	105	109	105	56-136	4	20	
Methyl acetate	ug/L	ND	50	50	57.2	54.7	114	109	10-142	4	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	58.5	55.0	117	110	35-176	6	20	
Methylene Chloride	ug/L	ND	50	50	61.9	57.7	124	115	45-166	7	20	
o-Xylene	ug/L	ND	50	50	53.2	51.4	106	103	57-133	4	20	
Styrene	ug/L	ND	50	50	54.3	52.0	109	104	58-144	4	20	
Tetrachloroethene	ug/L	ND	50	50	55.4	54.7	111	109	48-143	1	20	
Toluene	ug/L	ND	50	50	58.8	57.1	118	114	59-136	3	20	
rans-1,2-Dichloroethene	ug/L	ND	50	50	65.1	61.6	130	123	57-132	6	20	
rans-1,3-Dichloropropene	ug/L	ND	50	50	57.8	56.5	116	113	59-154	2	20	
Trichloroethene	ug/L	ND	50	50	62.0	59.2	124	118	58-140	5	20	
Trichlorofluoromethane	ug/L	ND	50	50	69.6	65.5	139	131	24-175	6	20	
Vinyl chloride	ug/L	ND	50	50	53.9	50.2	108	100	21-150	7	20	
1-Bromofluorobenzene (S)	%.						100	99	68-124			
Dibromofluoromethane (S)	%.						110	109	72-126			
Toluene-d8 (S)	%.						102	102	79-119			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

QC Batch: 71320 Analysis Method: EPA 8015B Modified QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 298333 Matrix: Water Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/10/17 15:33	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/10/17 15:33	
n-Pentacosane (S)	%.	28	16-137	01/10/17 15:33	
o-Terphenyl (S)	%.	35	10-121	01/10/17 15:33	

LABORATORY CONTROL SAMPLE: 298334 LCS LCS % Rec Spike Parameter Units Conc. Result % Rec Limits Qualifiers Diesel Range Organic (C10-C28) mg/L .4 .15J 37 10-115 n-Pentacosane (S) %. 38 16-137 o-Terphenyl (S) %. 44 10-121

MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 29833	5		298336							
			MS	MSD								
		2047753015	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.4	.4	.24J	0.34	47	71	10-122		20	
n-Pentacosane (S)	%.						55	82	16-137			
o-Terphenyl (S)	%.						58	83	10-121			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

QC Batch: 71324 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 298353 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/04/17 16:59	
Acenaphthene	ug/L	ND	0.10	01/04/17 16:59	
Acenaphthylene	ug/L	ND	0.10	01/04/17 16:59	
Anthracene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(a)anthracene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(a)pyrene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Chrysene	ug/L	ND	0.10	01/04/17 16:59	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/04/17 16:59	
Fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Fluorene	ug/L	ND	0.10	01/04/17 16:59	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/04/17 16:59	
Naphthalene	ug/L	ND	0.10	01/04/17 16:59	
Phenanthrene	ug/L	ND	0.10	01/04/17 16:59	
Pyrene	ug/L	ND	0.10	01/04/17 16:59	
2-Fluorobiphenyl (S)	%.	78	25-150	01/04/17 16:59	
Terphenyl-d14 (S)	%.	84	25-150	01/04/17 16:59	

LABORATORY CONTROL SAMPLE:	298354					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L		3.3	84	35-150	
Acenaphthene	ug/L	4	3.5	89	35-150	
Acenaphthylene	ug/L	4	3.4	85	35-150	
Anthracene	ug/L	4	4.1	103	35-150	
Benzo(a)anthracene	ug/L	4	3.6	89	35-150	
Benzo(a)pyrene	ug/L	4	3.3	82	35-150	
Benzo(b)fluoranthene	ug/L	4	3.3	83	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.9	97	35-150	
Benzo(k)fluoranthene	ug/L	4	3.4	84	35-150	
Chrysene	ug/L	4	3.3	83	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.3	107	35-150	
Fluoranthene	ug/L	4	3.1	79	35-150	
Fluorene	ug/L	4	3.4	85	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.1	102	35-150	
Naphthalene	ug/L	4	3.2	80	35-150	
Phenanthrene	ug/L	4	3.6	90	35-150	
Pyrene	ug/L	4	3.2	80	35-150	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

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LABORATORY CONTROL SAMPLE: 298354

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S) Terphenyl-d14 (S)	%. %.			103 103	25-150 25-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71393

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

Date: 01/16/2017 01:10 PM

C9 Common Laboratory Contaminant.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in

associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047989002	EB-122916	EPA 3535	71320	EPA 8015B Modified	71622
2047989003	MW-86A	EPA 3535	71320	EPA 8015B Modified	71622
2047989004	MW-MP5A	EPA 3535	71320	EPA 8015B Modified	71622
2047989005	MW-DP5	EPA 3535	71320	EPA 8015B Modified	71622
2047989001	TB-122916	EPA 8015/8021	71377		
2047989002	EB-122916	EPA 8015/8021	71377		
047989003	MW-86A	EPA 8015/8021	71377		
2047989004	MW-MP5A	EPA 8015/8021	71377		
047989005	MW-DP5	EPA 8015/8021	71377		
2047989006	FB-122916	EPA 8015/8021	71377		
2047989002	EB-122916	EPA 3010	71212	EPA 6020	71238
047989003	MW-86A	EPA 3010	71212	EPA 6020	71238
2047989004	MW-MP5A	EPA 3010	71212	EPA 6020	71238
2047989005	MW-DP5	EPA 3010	71212	EPA 6020	71238
047989002	EB-122916	EPA 3005A	71231	EPA 6020	71239
047989003	MW-86A	EPA 3005A	71231	EPA 6020	71239
047989004	MW-MP5A	EPA 3005A	71231	EPA 6020	71239
047989005	MW-DP5	EPA 3005A	71231	EPA 6020	71239
047989002	EB-122916	EPA 7470	71210	EPA 7470	71243
047989003	MW-86A	EPA 7470	71210	EPA 7470	71243
047989004	MW-MP5A	EPA 7470	71210	EPA 7470	71243
047989005	MW-DP5	EPA 7470	71210	EPA 7470	71243
047989002	EB-122916	EPA 7470	71229	EPA 7470	71242
047989003	MW-86A	EPA 7470	71229	EPA 7470	71242
2047989004	MW-MP5A	EPA 7470	71229	EPA 7470	71242
047989005	MW-DP5	EPA 7470	71229	EPA 7470	71242
047989002	EB-122916	EPA 3510	71324	EPA 8270 by SIM	71393
047989003	MW-86A	EPA 3510	71324	EPA 8270 by SIM	71393
2047989004	MW-MP5A	EPA 3510	71324	EPA 8270 by SIM	71393
047989005	MW-DP5	EPA 3510	71324	EPA 8270 by SIM	71393
047989001	TB-122916	EPA 5030B/8260	71267		
2047989002	EB-122916	EPA 5030B/8260	71267		
2047989003	MW-86A	EPA 5030B/8260	71267		
2047989004	MW-MP5A	EPA 5030B/8260	71267		
2047989005	MW-DP5	EPA 5030B/8260	71267		
2047989006	FB-122916	EPA 5030B/8260	71267		

10# : 2047989	Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.
#	

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Phone: Fax:	Project Nar	ne:	~	NV Ke		27. 0.			Pace Proj Manager.		Juni	n 8	,000s	S				Site	Loca	ation		0.0					
	Project Nur	mber:	<u> </u>	07. 16	. (3.v	100		\neg	Pace Pro										ST	ATE:	٠ <u>. ١</u>	<u> 8</u>					
Requested Due Date/TAT: S>			<u>ال</u>	<u>~ ~ . 10</u>	<u> </u>				_		***				· . R	Reque	estec	Anal	ysis	Filter	ed (Y	N)					
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Page 43 of 45					<u></u>						۲۰) A				DATE		ed i.	1.	. 1			[Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
45						SIGNATU	RE of SAMI	PLEF	<u> </u>	M						(MM/C	D/YY): 12	2 / س	<u> </u>	y is		F.,		_	7, 15-May	

Pace Analytical

Sample Condition Upon Receipt

WO#: 2047989

PM: JAR1

Due Date: 01/13/17

Project # CLIENT: 98-ARCADISPR

Urb. Jardines de Guaynabo Calle Mrginal Blq A-10 Guaynabo, PR 00969

☐ USPS ☐ Customer □ Other □ DHL ☐ Hired Courier ☐ Fed X □ UPS □ Pace Courier Courier: Custody Seals intact: □Yes □No [see COC] Custody Seal on Cooler/Box Present: ☐ Therm Fisher IR 4 Therometer Samples on ice: [see COC] Type of Ice: □ Therm Fisher IR 6 Used: □ Therm Fisher IR 7 Date and Initjals of person examining contents:__ 19-16 Temp should be above freezing to 6°C Cooler Temperature: [see COC] Temp must be measured from Temperature blank when present Comments: √Yes □No □N/A Temperature Blank Present"? ∕∐Yes □No □N/A Chain of Custody Present: ☑Yes □No □N/A Chain of Custody Complete: □yes □No □N/A Chain of Custody Relinquished: ☐Yes ☐No □N/A Sampler Name & Signature on COC: ÙYes □No □N/A Samples Arrived within Hold Time: □N/A Sufficient Volume: _Yes □No □N/A Correct Containers Used: □Yes □No □у⁄А Filtered vol. Rec. for Diss. tests 1 Yes □No □N/A 10 Sample Labels match COC: All containers received within manafacture's --∐Yes □No □N/A precautionary and/or expiration dates. All containers needing chemical preservation have □ N/4 ☐Yes ☐No been checked (except VOA, coliform, & O&G). 12 If No, was preserative added? □Yes □No All containers preservation checked found to be in □**f**N/A ☐Yes ☐No If added record lot no : HNO3 compliance with EPA recommendation. ÆN/A 14 □Yes □No... Headspace in VOA Vials (>6mm): □Yes -2No 15 Trip Blank Present: Client Notification/ Resolution: Date/Time: Person Contacted: Comments/ Resolution:

Sample Condition Upon Receipt

Pace Analytical	1000 Riverbend, Blvd., Suite F St. Rose, LA 70087		Project #	20
Courier: Pace Courier Custody Seal on Cooler/Box	*		PS □ DHL	☐ USPS ☐ Customer ☐ Other Custody Seals intact: ☐Yes ☐No
I nerometer	Fisher IR 5 Fisher IR 6 Tyl	pe of Ice:	Wet Blue None	Samples on ice: [see COC]
Cooler Temperature: [see	COC] Temp sh	ould be above	freezing to 6°C	Date and Initials of person examining contents:
Temp must be measured from Te	emperature blank when prese	nt	Comments:	
Temperature Blank Present"?	· 🗆	es □No□□N/A	1.	
Chain of Custody Present:		es □No □N/A	2	
Chain of Custody Complete:		es □No □N/A	3	
Chain of Custody Relinquishe	ed:	es DNo □N/A	4	
Sampler Name & Signature o		es □No □N/A	5	
Samples Arrived within Hold	Time:	es 🗆 No 🗆 N/A	6	
Sufficient Volume:		es 🗆 No 🗆 N/A	7	
Correct Containers Used:		es 🗆 No 🗆 N/A	8	
Filtered vol. Rec. for Diss. tes	its 🗆	es □No □N/	9	
Sample Labels match COC:		es 🗆 No 🗆 N/A	10	
All containers received within precautionary and/or expiration		es 🗆 No 🗆 N//	11	
All containers needing chemic been checked (except VOA, o		es □No □N/	12	
All containers preservation ch compliance with EPA recomm		es 🗆 No 🗆 N/A		preserative added?
Headspace in VOA Vials (>6	mm):	'es ∠No □N/A	14	
Trip Blank Present:		es □No	15	
Client Notification/ Resolut	ion			
Person Contacted:				Date/Time:
Comments/ Resolution:				
		"		
	·			





January 18, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 04, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

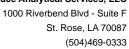
Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048198001	TB-010317	Water	01/03/17 00:00	01/04/17 15:08
2048198002	EB-010317	Water	01/03/17 08:48	01/04/17 15:08
2048198003	MW-B9	Water	01/03/17 09:35	01/04/17 15:08
2048198004	MW-EB103	Water	01/03/17 10:27	01/04/17 15:08
2048198005	MW-EB104	Water	01/03/17 11:26	01/04/17 15:08
2048198006	MW-EB105	Water	01/03/17 13:45	01/04/17 15:08
2048198007	DUP004	Water	01/03/17 00:00	01/04/17 15:08
2048198008	MW-EB106	Water	01/03/17 14:28	01/04/17 15:08
2048198009	MW-EB107	Water	01/03/17 15:11	01/04/17 15:08
2048198010	MW-EB108	Water	01/03/17 16:01	01/04/17 15:08
2048198011	FB-010317	Water	01/03/17 16:10	01/04/17 15:08
2048198012	TB-010417	Water	01/04/17 00:00	01/04/17 15:08
2048198013	EB-010417	Water	01/04/17 08:58	01/04/17 15:08
2048198014	MW-DP1	Water	01/04/17 09:36	01/04/17 15:08
2048198015	MW-MP2	Water	01/04/17 10:25	01/04/17 15:08
2048198016	MW-MP3	Water	01/04/17 11:46	01/04/17 15:08
2048198017	MW-MP8	Water	01/04/17 13:33	01/04/17 15:08
2048198018	TB-010417-2	Water	01/04/17 00:00	01/04/17 15:08
2048198019	MW-NDP	Water	01/04/17 14:22	01/04/17 15:08
2048198020	FB-010417	Water	01/04/17 14:30	01/04/17 15:08



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048198001	TB-010317	EPA 8015/8021	MHM		PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198002	EB-010317	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048198003	MW-B9	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048198004	MW-EB103	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048198005	MW-EB104	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198006	MW-EB105	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

ab ID	Sample ID	Method	Analysts	Analytes Reported	Laborator
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198007	DUP004	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198008	MW-EB106	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
48198009	MW-EB107	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198010	MW-EB108	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048198011	FB-010317	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198012	TB-010417	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198013	EB-010417	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198014	MW-DP1	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048198015	MW-MP2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198016	MW-MP3	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048198017	MW-MP8	EPA 8015B Modified	SLF	4	PASI-N

REPORT OF LABORATORY ANALYSIS



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198018	TB-010417-2	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198019	MW-NDP	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198020	FB-010417	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N



PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

20 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 6020

Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 7470
Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71616

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299682)
 - Mercury
- MSD (Lab ID: 299683)
 - Mercury



PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71675

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299990)
 - Mercury, Dissolved
- MSD (Lab ID: 299991)
 - Mercury, Dissolved

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71484

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

R1: RPD value was outside control limits.

- MSD (Lab ID: 299017)
 - 2-Methylnaphthalene
 - Acenaphthene
 - Acenaphthylene
 - Anthracene
 - Benzo(a)anthracene
 - Benzo(a)pyrene
 - Benzo(b)fluoranthene
 - Benzo(k)fluoranthene
 - Chrysene



PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 8270 by SIM

Description:8270 MSSV PAH by SIM SEPClient:BBL Caribe / Arcadis PRDate:January 18, 2017

QC Batch: 71484

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

R1: RPD value was outside control limits.

• Fluoranthene

- Fluorene
- Naphthalene
- Phenanthrene
- Pyrene

QC Batch: 71561

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

20 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71490

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 299029)
 - Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71490

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 299030)
 - Carbon disulfide
- MSD (Lab ID: 299031)
 - Carbon disulfide

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method:EPA 5030B/8260Description:8260 MSV Low LevelClient:BBL Caribe / Arcadis PRDate:January 18, 2017

Analyte Comments:

QC Batch: 71490

C9: Common Laboratory Contaminant.

- DUP004 (Lab ID: 2048198007)
 - Acetone
- EB-010317 (Lab ID: 2048198002)
 - Acetone
- EB-010417 (Lab ID: 2048198013)
 - Acetone
- FB-010317 (Lab ID: 2048198011)
 - Acetone
- FB-010417 (Lab ID: 2048198020)
 - Acetone
- MW-B9 (Lab ID: 2048198003)
 - Acetone
- MW-DP1 (Lab ID: 2048198014)
 - Acetone
- MW-EB103 (Lab ID: 2048198004)
 - Acetone
- MW-EB104 (Lab ID: 2048198005)
 - Acetone
- MW-EB105 (Lab ID: 2048198006)
 - Acetone
- MW-EB106 (Lab ID: 2048198008)
 - Acetone
- MW-EB108 (Lab ID: 2048198010)
 - Acetone
- MW-MP2 (Lab ID: 2048198015)
 - Acetone
- MW-MP3 (Lab ID: 2048198016)
 - Acetone
- MW-MP8 (Lab ID: 2048198017)
 - Acetone
- MW-NDP (Lab ID: 2048198019)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: TB-010317	Lab ID: 204	8198001	Collected: 01/03/1	7 00:00	Received:	01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/06/17 20:4	8	
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/06/17 20:4	8 460-00-4	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	171	ug/L	4.0	1		01/06/17 11:4	2 67-64-1	
Benzene	ND	ug/L	0.50	1		01/06/17 11:4:	2 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 11:4	2 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 11:4:	2 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 11:4:	2 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 11:4:	2 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 11:4:	2 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 11:4:	2 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 11:4:	2 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 11:4		
Chloroform	ND	ug/L	0.50	1		01/06/17 11:4		
Chloromethane	ND	ug/L	0.50	1		01/06/17 11:4:		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 11:4:		
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 11:4:		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 11:4:	_	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 11:4:		
,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:4:		
,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:4:		
,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:4:		
sis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 11:4:		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:4:		
1,2-Dichloropropane	ND ND	ug/L ug/L	0.50	1		01/06/17 11:4:		
	ND ND	•	0.50	1			2 10061-01-5	
cis-1,3-Dichloropropene		ug/L						
rans-1,3-Dichloropropene	ND	ug/L	0.50	1 1			2 10061-02-6	
Ethylbenzene	ND	ug/L	0.50			01/06/17 11:4:		
2-Hexanone	ND	ug/L	1.0	1		01/06/17 11:4:		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 11:4:		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 11:4:		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 11:4:		
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 11:4:		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 11:4		
Styrene	ND	ug/L	1.0	1		01/06/17 11:4		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 11:4		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 11:4		
Toluene	ND	ug/L	0.50	1		01/06/17 11:4:		
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:4		
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:4		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 11:4:	2 79-01-6	
richlorofluoromethane	ND	ug/L	0.50	1		01/06/17 11:4	2 75-69-4	
/inyl chloride	ND	ug/L	0.50	1		01/06/17 11:4	2 75-01-4	
n&p-Xylene	ND	ug/L	2.0	1		01/06/17 11:4	2 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 11:4:	2 95-47-6	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: TB-010317	Lab ID: 204	8198001	Collected: 01/03/1	7 00:00	Received: 0	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	106	%.	72-126	1		01/06/17 11:42		
1-Bromofluorobenzene (S)	96	%.	68-124	1		01/06/17 11:42		
oluene-d8 (S)	99	%.	79-119	1		01/06/17 11:42	2 2037-26-5	
Sample: EB-010317	Lab ID: 204	8198002	Collected: 01/03/1	7 08:48	Received: 0	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 17:2	7	
Dil Range Organics (>C28-C40)	ND	mg/L	0.50	1		01/11/17 17:2		
Surrogates		-						
n-Pentacosane (S)	49	%.	16-137	1		01/11/17 17:2		
-Terphenyl (S)	50	%.	10-121	1	01/06/17 07:40	01/11/17 17:2	7 84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/06/17 18:0	8	
-Bromofluorobenzene (S)	90	%.	44-148	1		01/06/17 18:0	8 460-00-4	
020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:5	2 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:5	2 7440-47-3	
.ead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:5	2 7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:5	2 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:2:	2 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:2:	2 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:2	2 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:2	2 7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:1	7 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:0	3 7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1		01/09/17 20:4		
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:4	0 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:4	0 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:4	0 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:4	0 50-32-8	



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: EB-010317	Lab ID: 204	8198002	Collected: 01/03/1	7 08:48	Received: 01	/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparation	on Meth	od: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	91-57-6	
Naphthalene	ND	ug/L	0.10	1		01/09/17 20:40		
Phenanthrene	ND	ug/L	0.10	1		01/09/17 20:40		
Pyrene	ND	ug/L	0.10	1		01/09/17 20:40		
Surrogates	1,15	~g/ =	5.70	•	2 ., 00, . 1 00.20	2., 33, 11 20.40	30 0	
2-Fluorobiphenyl (S)	84	%.	25-150	1	01/06/17 09:20	01/09/17 20:40	321-60-8	
erphenyl-d14 (S)	84	%.	25-150	1		01/09/17 20:40		
3260 MSV Low Level	Analytical Met							
Acetone	12.1		4.0	1		01/06/17 11:59	67.64.1	C9
		ug/L						C9
Benzene	ND	ug/L	0.50	1		01/06/17 11:59		
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 11:59	-	
Bromoform	ND	ug/L	0.50	1		01/06/17 11:59		
Bromomethane	ND	ug/L	0.50	1		01/06/17 11:59		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 11:59		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 11:59		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 11:59		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 11:59		
Chloroethane	ND	ug/L	0.50	1		01/06/17 11:59		
Chloroform	ND	ug/L	0.50	1		01/06/17 11:59		
Chloromethane	ND	ug/L	0.50	1		01/06/17 11:59		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 11:59		
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 11:59	_	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 11:59	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 11:59	75-71-8	
,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:59	75-34-3	
,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:59	107-06-2	
,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:59	75-35-4	
is-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 11:59	156-59-2	
ans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:59	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 11:59	78-87-5	
is-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:59	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:59	10061-02-6	
thylbenzene	ND	ug/L	0.50	1		01/06/17 11:59	100-41-4	
-Hexanone	ND	ug/L	1.0	1		01/06/17 11:59		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 11:59		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 11:59		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 11:59		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 11:59		



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: EB-010317	Lab ID: 204	8198002	Collected: 01/03/1	7 08:48	Received: 01	/04/17 15:08 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 11:59	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 11:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 11:59	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 11:59	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 11:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:59	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 11:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 11:59	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 11:59	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 11:59		
o-Xylene	ND	ug/L	1.0	1		01/06/17 11:59		
Surrogates		- y -		-				
Dibromofluoromethane (S)	107	%.	72-126	1		01/06/17 11:59	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 11:59		
Toluene-d8 (S)	99	%.	79-119	1		01/06/17 11:59		
()								
Sample: MW-B9	Lab ID: 204	8198003	Collected: 01/03/1	7 09:35	Received: 01	/04/17 15:08 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 17:55		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1		01/11/17 17:55		
Surrogates	ND	mg/L	0.50	ı	01/00/11 01.40	01/11/17 17.55		
n-Pentacosane (S)	49	%.	16-137	1	01/06/17 07:40	01/11/17 17:55	629-99-2	
o-Terphenyl (S)	59	%.	10-121	1		01/11/17 17:55		
o respirency (e)	00	70.	10 121	•	01/00/17 07.40	01/11/17 17:00	04 10 1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/06/17 18:34		
4-Bromofluorobenzene (S)	93	%.	44-148	1		01/06/17 18:34	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3010			
Arsenic	0.0032	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:56	7440-38-2	
Chromium	ND	mg/L	0.0010	1		01/13/17 21:56		
Lead	ND	mg/L	0.0010	1		01/13/17 21:56		
Vanadium	ND	mg/L	0.0050	1		01/13/17 21:56		
6020 MET ICPMS, Dissolved (LF)		_	020 Preparation Meth			01/10/17 21:00	7440 02 2	
Arsenic, Dissolved	ND		1.0	1		01/13/17 23:26	7440-29 2	
ALSEING DISSUIVED		ug/L	1.0					
•			1 ()	1	01/10/1/ 11:44	01/13/17 23:26	1440-41-3	
Chromium, Dissolved	ND	ug/L			04/40/47 44 44	04/40/47 00 00	7400 00 4	
Chromium, Dissolved Lead, Dissolved Vanadium, Dissolved	ND ND ND	ug/L ug/L ug/L	1.0 5.0	1		01/13/17 23:26 01/13/17 23:26		



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Pace Project No.: 2048198								
Sample: MW-B9	Lab ID: 204	8198003	Collected: 01/03/1	7 09:35	Received: 01	/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	od: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:19	9 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	od: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:10	7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparation	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	0 83-32-9	
cenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	0 208-96-8	
anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	0 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	0 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	0 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20			
Chrysene	ND ND	ug/L	0.10	1	01/06/17 09:20			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20			
luoranthene		-						
	ND	ug/L	0.10	1	01/06/17 09:20			
luorene	ND	ug/L	0.10	1	01/06/17 09:20			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20			
-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20			
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20			
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:0	0 85-01-8	
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	0 129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	94	%.	25-150	1	01/06/17 09:20	01/09/17 21:00	321-60-8	
erphenyl-d14 (S)	88	%.	25-150	1	01/06/17 09:20	01/09/17 21:00	0 1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
cetone	5.3	ug/L	4.0	1		01/06/17 12:13	7 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 12:17	7 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 12:17	7 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 12:13	7 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 12:17	7 74-83-9	
P-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 12:17	7 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 12:17	7 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 12:13		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 12:13		
Chloroethane	ND	ug/L	0.50	1		01/06/17 12:11		
Chloroform	ND	ug/L	0.50	1		01/06/17 12:11		
Chloromethane	ND	ug/L	0.50	1		01/06/17 12:11		
,2-Dibromo-3-chloropropane	ND ND	ug/L ug/L	0.20	1		01/06/17 12:11		
		_				01/06/17 12:1		
Dibromochloromethane	ND ND	ug/L	0.50	1				
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 12:11		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 12:13		
I,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:11		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:1	7 107-06-2	



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-B9	Lab ID: 204	8198003	Collected: 01/03/1	7 09:35	Received: 01	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:17	7 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 12:17	7 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:17	7 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 12:17	7 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:17	7 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:17	7 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 12:17	7 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 12:17	7 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 12:17	7 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 12:17	7 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 12:17		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 12:17		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 12:17		
Styrene	ND	ug/L	1.0	1		01/06/17 12:17		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 12:17		
Tetrachloroethene	ND	ug/L ug/L	0.50	1		01/06/17 12:17		
Toluene	ND ND	ug/L ug/L	0.50	1		01/06/17 12:17	_	
1,1,1-Trichloroethane	ND	•	0.50	1		01/06/17 12:17		
1,1,2-Trichloroethane		ug/L						
* *	ND	ug/L	0.50	1		01/06/17 12:17		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 12:17		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 12:17		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 12:17		
m&p-Xylene	ND	ug/L	2.0	1			7 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 12:17	7 95-47-6	
Surrogates	405	0.4	70.400			04/00/47 40 47		
Dibromofluoromethane (S)	105	%.	72-126	1		01/06/17 12:17		
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/06/17 12:17		
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 12:17	7 2037-26-5	
Sample: MW-EB103	Lab ID: 204	8198004	Collected: 01/03/1	7 10:27	Received: 01	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	D15B Modified Prepa	ration M	lethod: EPA 3535	- 5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 18:23	3	
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1		01/11/17 18:23		
Surrogates								
n-Pentacosane (S)	59	%.	16-137	1		01/11/17 18:23		
	49	%.	10-121	1	01/06/17 07:40	01/11/17 18:23	84-15-1	
o-Terphenyl (S)								
. , ,	Analytical Meth	hod: EPA 80	015/8021					
8021 GCV BTEX, MTBE, GRO Gasoline Range Organics		nod: EPA 80 ug/L	015/8021 50.0	1		01/06/17 19:0	1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	Analytical Meth			1		01/06/17 19:0 ⁻⁰		



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: MW-EB103	Lab ID: 204	8198004	Collected: 01/03/1	7 10:27	Received: 01	/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	od: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:08	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Meth	od: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:30	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:30	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:30	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:30	7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	70 Preparation Meth	od: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:26	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Meth	od: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:19	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	70 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1		01/09/17 21:20		
Naphthalene	ND	ug/L	0.10	1		01/09/17 21:20		
Phenanthrene	ND	ug/L	0.10	1		01/09/17 21:20		
Pyrene	ND	ug/L	0.10	1		01/09/17 21:20		
Surrogates	110	ug/ =	0.10	•	01/00/11 00:20	01/00/11 21:20	120 00 0	
2-Fluorobiphenyl (S)	86	%.	25-150	1	01/06/17 09:20	01/09/17 21:20	321-60-8	
Terphenyl-d14 (S)	80	%.	25-150	1	01/06/17 09:20	01/09/17 21:20	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	30B/8260					
Acetone	15.6	ug/L	4.0	1		01/06/17 12:34	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 12:34		
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 12:34		
Bromoform	ND	ug/L	0.50	1		01/06/17 12:34		
Bromomethane	ND	ug/L	0.50	1		01/06/17 12:34		
2-Butanone (MEK)	ND ND	ug/L ug/L	2.0	1		01/06/17 12:34		



Project: PUMA TERMINAL MW-SAMPLING

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Date: 01/18/2017 12:36 PM

Sample: MW-EB103	Lab ID: 2	048198004	Collected: 01/03/1	7 10:27	Received:	01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical M	ethod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 12:34	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 12:34	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 12:34	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 12:34	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 12:34	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 12:34	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 12:34	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 12:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 12:34	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 12:34	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 12:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:34		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 12:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:34	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:34	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 12:34		
2-Hexanone	ND	ug/L	1.0	1		01/06/17 12:34	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 12:34	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 12:34		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 12:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 12:34		
Methyl-tert-butyl ether	45.3	ug/L	0.50	1		01/06/17 12:34	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 12:34		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 12:34		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 12:34		
Toluene	ND	ug/L	0.50	1		01/06/17 12:34		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:34		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:34		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 12:34		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 12:34		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 12:34		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 12:34		
o-Xylene	ND	ug/L	1.0	1		01/06/17 12:34		
Surrogates	140	49, L	1.0	•		01,00/11 12.0-		
Dibromofluoromethane (S)	109	%.	72-126	1		01/06/17 12:34	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 12:34		
Toluene-d8 (S)	101	%.	79-119	1		01/06/17 12:34		



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: MW-EB104	Lab ID: 204	8198005	Collected: 01/03/1	7 11:26	Received: 01	/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
B015M DRO/ORO Organics	Analytical Meth	nod: EPA 80)15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 18:51		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 18:51		
n-Pentacosane (S)	47	%.	16-137	1	01/06/17 07:40	01/11/17 18:51	629-99-2	
o-Terphenyl (S)	55	%.	10-121	1		01/11/17 18:51		
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	88.4	ug/L	50.0	1		01/06/17 19:28	3	
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/06/17 19:28	3 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:11	7440-38-2	
Chromium	0.0017	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:11	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:11	7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:11	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:42	2 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/13/17 23:42		
_ead, Dissolved	ND	ug/L	1.0	1		01/13/17 23:42		
/anadium, Dissolved	ND	ug/L	5.0	1		01/13/17 23:42		
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:28	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:24	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	9 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/09/17 21:39		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/09/17 21:39		
Chrysene	ND	ug/L	0.10	1		01/09/17 21:39		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/09/17 21:39		
Fluoranthene	ND	ug/L	0.10	1		01/09/17 21:39		
	ND ND	ug/L	0.10	1		01/09/17 21:39		
Fluorene		-				01/09/17 21:39		
Fluorene	NID	LIA/I	Λ 1Λ					
ndeno(1,2,3-cd)pyrene	ND ND	ug/L	0.10	1				
	ND ND ND	ug/L ug/L ug/L	0.10 0.10 0.10	1 1 1		01/09/17 21:39	91-57-6	



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: MW-EB104	Lab ID: 204	8198005	Collected: 01/03/1	7 11:26	Received: 01	I/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	nod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	25-150	1		01/09/17 21:39		
Terphenyl-d14 (S)	79	%.	25-150	1	01/06/17 09:20	01/09/17 21:39	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	6.2	ug/L	4.0	1		01/06/17 12:52	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 12:52	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 12:52	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 12:52	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 12:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 12:52		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 12:52		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 12:52		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 12:52		
Chloroethane	ND	ug/L	0.50	1		01/06/17 12:52		
Chloroform	ND	ug/L	0.50	1		01/06/17 12:52		
Chloromethane	ND ND	ug/L	0.50	1		01/06/17 12:52		
1,2-Dibromo-3-chloropropane		•				01/06/17 12:52		
	ND	ug/L	0.20	1 1				
Dibromochloromethane	ND	ug/L	0.50			01/06/17 12:52		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 12:52		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 12:52		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:52		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:52		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:52		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 12:52	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 12:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:52	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:52	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 12:52	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 12:52	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 12:52	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 12:52		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 12:52	75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 12:52		
Methyl-tert-butyl ether	61.2	ug/L	0.50	1		01/06/17 12:52		
Styrene	ND	ug/L	1.0	1		01/06/17 12:52		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 12:52		
Tetrachloroethene	ND ND		0.50	1		01/06/17 12:52		
Foluene	ND ND	ug/L ug/L	0.50	1		01/06/17 12:52		
		•						
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:52		
I,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:52		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 12:52		
Frichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 12:52		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 12:52		
n&p-Xylene	ND	ug/L	2.0	1		01/06/17 12:52	179601-23-1	



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB104	Lab ID: 2048	8198005	Collected: 01/03/1	7 11:26	Received: (01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		01/06/17 12:52	2 95-47-6	
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 12:52	2 1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/06/17 12:52		
Toluene-d8 (S)	99	%.	79-119	1		01/06/17 12:52	2 2037-26-5	
Sample: MW-EB105	Lab ID: 2048	8198006	Collected: 01/03/1	7 13:45	Received: (01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	35	•	
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:4	0 01/11/17 19:19)	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1		0 01/11/17 19:19		
n-Pentacosane (S)	48	%.	16-137	1	01/06/17 07:4	0 01/11/17 19:19	629-99-2	
o-Terphenyl (S)	64	%.	10-121	1	01/06/17 07:4	0 01/11/17 19:19	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/06/17 19:54	1	
4-Bromofluorobenzene (S)	91	%.	44-148	1		01/06/17 19:54	4 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	0.0052	mg/L	0.0010	1	01/09/17 15:3	2 01/13/17 21:36	6 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:3	2 01/13/17 21:36	6 7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:3	2 01/13/17 21:36	7439-92-1	
√anadium	ND	mg/L	0.0050	1	01/09/17 15:3	2 01/13/17 21:36	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	1.6	ug/L	1.0	1	01/10/17 11:4	4 01/13/17 20:2	1 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	4 01/13/17 20:2	1 7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:4	4 01/13/17 20:2	1 7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:4	4 01/13/17 20:2	1 7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:1	9 01/09/17 20:1	7439-97-6	M1
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:3	0 01/10/17 16:5	5 7439-97-6	M1
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	0.27	ug/L	0.10	1		0 01/09/17 21:59		R1
Acenaphthylene	ND	ug/L	0.10	1		0 01/09/17 21:59		R1
Anthracene	0.11	ug/L	0.10	1		0 01/09/17 21:59	-	R1
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:2	0 01/09/17 21:59	9 56-55-3	R1



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB105	Lab ID:	2048198006	Collected: 01/03/	17 13:45	Received: 01	/04/17 15:08 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical	Method: EPA 8	270 by SIM Preparat	ion Meth	od: EPA 3510			
Benzo(a)pyrene	NE	O ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	50-32-8	R1
Benzo(b)fluoranthene	NE	O ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	205-99-2	R1
Benzo(g,h,i)perylene	NE	O ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	191-24-2	
Benzo(k)fluoranthene	NE	O ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	207-08-9	R1
Chrysene	NE	O ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	218-01-9	R1
Dibenz(a,h)anthracene	NE	_	0.10	1	01/06/17 09:20	01/09/17 21:59	53-70-3	
Fluoranthene	NE	_	0.10	1	01/06/17 09:20	01/09/17 21:59	206-44-0	R1
Fluorene	NE	•	0.10	1	01/06/17 09:20	01/09/17 21:59	86-73-7	R1
ndeno(1,2,3-cd)pyrene	NE	ū	0.10	1		01/09/17 21:59		
2-Methylnaphthalene	NE	J	0.10	1		01/09/17 21:59		R1
Naphthalene	NE	_	0.10	1		01/09/17 21:59		R1
Phenanthrene	0.20	_	0.10	1		01/09/17 21:59		R1
Pyrene	NE NE	_	0.10	1		01/09/17 21:59		R1
Surrogates	. 1.2	3	0.10	•	01/00/11 00:20	01/00/11 21:00	120 00 0	
2-Fluorobiphenyl (S)	97	7 %.	25-150	1	01/06/17 09:20	01/09/17 21:59	321-60-8	
Terphenyl-d14 (S)	99		25-150	1		01/09/17 21:59		
3260 MSV Low Level	Analytical	Method: EPA 5	030B/8260					
Acetone	39.4	4 ug/L	4.0	1		01/06/17 11:24	67-64-1	C9
Benzene	NE NE	J	0.50	1		01/06/17 11:24		00
Bromodichloromethane	NE		0.50	1		01/06/17 11:24		
Bromoform	NE	J	0.50	1		01/06/17 11:24		
Bromomethane	NE	J	0.50	1		01/06/17 11:24		
2-Butanone (MEK)	NE NE	J	2.0	1		01/06/17 11:24		
Carbon disulfide	NE NE		1.0	1		01/06/17 11:24		L1,M0
Carbon tetrachloride	NE NE	_	0.50	1		01/06/17 11:24		L I,IVIO
	NE NE	_	0.50	1		01/06/17 11:24		
Chlorobenzene		J		1				
Chloroethane	NE	J	0.50			01/06/17 11:24		
Chloroform Chloromethane	NE	J	0.50	1 1		01/06/17 11:24		
	NE	J	0.50			01/06/17 11:24		
1,2-Dibromo-3-chloropropane	NE	J	0.20	1		01/06/17 11:24		
Dibromochloromethane	NE	J	0.50	1		01/06/17 11:24		
1,2-Dibromoethane (EDB)	NE	J	1.0	1		01/06/17 11:24		
Dichlorodifluoromethane	NE	9	1.0	1		01/06/17 11:24		
1,1-Dichloroethane	NE	- 3	0.50	1		01/06/17 11:24		
1,2-Dichloroethane	NE	J	0.50	1		01/06/17 11:24		
1,1-Dichloroethene	NE	J	0.50	1		01/06/17 11:24		
cis-1,2-Dichloroethene	NE	J	1.0	1		01/06/17 11:24		
rans-1,2-Dichloroethene	NE	ū	0.50	1		01/06/17 11:24		
1,2-Dichloropropane	NE	J	0.50	1		01/06/17 11:24		
cis-1,3-Dichloropropene	NE	J	0.50	1		01/06/17 11:24		
rans-1,3-Dichloropropene	NE	ū	0.50	1		01/06/17 11:24		
Ethylbenzene	NE) ug/L	0.50	1		01/06/17 11:24	100-41-4	
2-Hexanone	NE	•	1.0	1		01/06/17 11:24	591-78-6	
sopropylbenzene (Cumene)	NE	O ug/L	1.0	1		01/06/17 11:24	98-82-8	
Methyl acetate	NE	O ug/L	2.0	1		01/06/17 11:24	79-20-9	
Methylene Chloride	NE	D ug/L	0.50	1		01/06/17 11:24	75-09-2	



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB105	Lab ID: 204	3198006	Collected: 01/03/1	7 13:45	Received: 01	/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 11:24	108-10-1	
Methyl-tert-butyl ether	8.2	ug/L	0.50	1		01/06/17 11:24	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 11:24	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 11:24	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 11:24	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 11:24	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:24	71-55-6	
I,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:24	79-00-5	
Frichloroethene	ND	ug/L	0.50	1		01/06/17 11:24		
Frichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 11:24		
/inyl chloride	ND	ug/L	0.50	1		01/06/17 11:24		
m&p-Xylene	ND	ug/L	2.0	1			179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 11:24		
Surrogates	ND	ug/L	1.0	'		01/00/17 11.24	35-47-0	
Dibromofluoromethane (S)	106	%.	72-126	1		01/06/17 11:24	1868-53-7	
1-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 11:24		
Foliuene-d8 (S)	100	%.	79-119	1		01/06/17 11:24		
oldone do (o)	100	70.	75 110			01/00/17 11:24	2007 20 0	
Sample: DUP004	Lab ID: 204	3198007	Collected: 01/03/1	7 00:00	Received: 01	/04/17 15:08	Matrix: Water	
Sample: DUP004 Parameters	Lab ID: 204	3198007 Units	Collected: 01/03/1	7 00:00 DF	Received: 01 Prepared	/04/17 15:08 Analyzed	Matrix: Water CAS No.	Qua
Sample: DUP004 Parameters B015M DRO/ORO Organics	Results	Units		DF	Prepared	Analyzed		Qua
Parameters 3015M DRO/ORO Organics	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Parameters B015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40)	Results Analytical Meth	Units	Report Limit 015B Modified Prepa	DF ration M	Prepared ethod: EPA 3535	Analyzed 6 01/11/17 20:42	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates	Results Analytical Meth	Units nod: EPA 80 mg/L	Report Limit 015B Modified Prepa 0.25	DF ration M	Prepared ethod: EPA 3535 01/06/17 07:40	Analyzed 01/11/17 20:42 01/11/17 20:42	CAS No.	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S)	Analytical Meth	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.25 0.50	DF ration M 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S)	Results Analytical Meth 0.25 ND 71	Units nod: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Preparation 0.25 0.50 16-137 10-121	DF ration M 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42	CAS No.	Qua
Parameters	Results Analytical Methods 0.25 ND 71 82	Units nod: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Preparation 0.25 0.50 16-137 10-121	DF ration M 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	Analytical Methods O.25 ND 71 82 Analytical Methods	Units nod: EPA 80 mg/L mg/L %. %. hod: EPA 80	Report Limit 0.15B Modified Preparation 0.25 0.50 16-137 10-121 0.15/8021	DF ration M 1 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) 8027 Surrogates 1-Pentacosane (S) 1-Pentacosane (S) 1-Bromofluorobenzene (S) 8021 GCV BTEX, MTBE, GRO 8036 Gasoline Range Organics 8047 Surrogates 1-Bromofluorobenzene (S)	Results Analytical Meth 0.25 ND 71 82 Analytical Meth ND 88	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.25 0.50 16-137 10-121 015/8021 50.0	DF ration M 1 1 1 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/06/17 20:21	CAS No.	Qua
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) 3021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 5020 MET ICPMS	Results Analytical Meth 0.25 ND 71 82 Analytical Meth ND 88	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.25 0.50 16-137 10-121 0.15/8021 50.0 44-148	DF ration M 1 1 1 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/06/17 20:21	CAS No. 2 629-99-2 84-15-1 460-00-4	Qua
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) 3021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic	Results Analytical Methods 71 82 Analytical Methods ND 88 Analytical Methods	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60	Report Limit 0.15B Modified Preparation 0.25 0.50 16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth	DF ration M 1 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/06/17 20:21 01/06/17 20:21	CAS No. 2 629-99-2 2 84-15-1 460-00-4 5 7440-38-2	Qua
Parameters B015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) n-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates I-Bromofluorobenzene (S) B020 MET ICPMS Arsenic Chromium	Results Analytical Meth 0.25 ND 71 82 Analytical Meth ND 88 Analytical Meth 0.0052	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L	Report Limit 0.15B Modified Preparation 0.25 0.50 16-137 10-121 015/8021 50.0 44-148 020 Preparation Methodox	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/06/17 20:21 01/06/17 20:21 01/13/17 22:15 01/13/17 22:15	CAS No. 2 629-99-2 2 84-15-1 460-00-4 5 7440-38-2 7 7440-47-3	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates 1-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium Lead	Results Analytical Meth 0.25 ND 71 82 Analytical Meth ND 88 Analytical Meth 0.0052 0.0010	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L	Report Limit 0.15B Modified Preparation 0.25 0.50 16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/06/17 15:32 01/09/17 15:32	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/06/17 20:21 01/06/17 20:21 01/13/17 22:15 01/13/17 22:15	CAS No. 2 629-99-2 2 84-15-1 460-00-4 5 7440-38-2 5 7440-47-3 7 7439-92-1	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Dissoline Range Organics Dis	Results Analytical Meth 0.25 ND 71 82 Analytical Meth ND 88 Analytical Meth 0.0052 0.0010 ND ND	Units mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Preparation 0.25 0.50 16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/06/17 15:32 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/06/17 20:21 01/06/17 20:21 01/13/17 22:15 01/13/17 22:15	CAS No. 2 629-99-2 2 84-15-1 460-00-4 5 7440-38-2 5 7440-47-3 7 7439-92-1	Qua
Parameters Bo15M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) Bo21 GCV BTEX, MTBE, GRO Basoline Range Organics Surrogates D-Bromofluorobenzene (S) Bo20 MET ICPMS Arsenic Chromium Lead Janadium Bo20 MET ICPMS, Dissolved (LF)	Results Analytical Meth 0.25 ND 71 82 Analytical Meth ND 88 Analytical Meth 0.0052 0.0010 ND ND	Units mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.25 0.50 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0010 0.0050	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/06/17 15:32 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/06/17 20:21 01/06/17 20:21 01/13/17 22:15 01/13/17 22:15 01/13/17 22:15	CAS No. 2 629-99-2 2 84-15-1 460-00-4 5 7440-38-2 7440-47-3 5 7439-92-1 5 7440-62-2	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	Results Analytical Meth 0.25 ND 71 82 Analytical Meth ND 88 Analytical Meth 0.0052 0.0010 ND ND ND Analytical Meth	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L od: EPA 60	Report Limit 0.15B Modified Prepa 0.25 0.50 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth	DF ration M 1 1 1 1 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/06/17 15:32 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/06/17 20:21 01/06/17 20:21 01/13/17 22:15 01/13/17 22:15 01/13/17 22:15 01/13/17 23:46	CAS No. 2 629-99-2 2 84-15-1 460-00-4 5 7440-38-2 5 7440-62-2 6 7440-38-2	Qua
Parameters B015M DRO/ORO Organics Diesel Range Organics (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Basoline Range Organics Surrogates 1-Bromofluorobenzene (S) B020 MET ICPMS Arsenic Chromium Lead Vanadium B020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Results Analytical Meth 0.25 ND 71 82 Analytical Meth ND 88 Analytical Meth 0.0052 0.0010 ND ND ND Analytical Meth 1.5	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L od: EPA 60 ug/L	Report Limit 0.15B Modified Prepa 0.25 0.50 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth 1.0	DF ration M 1 1 1 1 1 1 1 1 1 nod: EPA 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/06/17 07:40 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32	Analyzed 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/11/17 20:42 01/06/17 20:21 01/06/17 20:21 01/13/17 22:15 01/13/17 22:15 01/13/17 23:46 01/13/17 23:46	CAS No. 2 629-99-2 2 84-15-1 460-00-4 5 7440-38-2 5 7440-62-2 6 7440-38-2 7 7440-38-2 7 7440-38-2 7 7440-47-3	Qua



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Pace Project No.: 2048198								
Sample: DUP004	Lab ID: 204	8198007	Collected: 01/03/17	00:00	Received: 01	/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Metho	od: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:30	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Metho	od: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:26	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparatio	n Meth	od: EPA 3510			
Acenaphthene	0.13	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20) 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20			
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20			
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20			
luorene	ND	ug/L	0.10	1	01/06/17 09:20			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20			
P-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20			
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20			
Phenanthrene	ND ND	-	0.10	1	01/06/17 09:20			
	ND ND	ug/L	0.10	1	01/06/17 09:20			
Pyrene Surrogates	ND	ug/L	0.10	'	01/06/17 09.20	01/10/17 13.20	129-00-0	
2-Fluorobiphenyl (S)	80	%.	25-150	1	01/06/17 09:20	01/10/17 13:20	321-60-8	
Ferphenyl-d14 (S)	81	%.	25-150 25-150	1	01/06/17 09:20			
				ı	01/06/17 09.20	01/10/17 13.20	7 1710-51-0	
3260 MSV Low Level	Analytical Meth					04/00/47 40 46		00
Acetone	11.3	ug/L	4.0	1		01/06/17 13:10		C9
Benzene	ND	ug/L	0.50	1		01/06/17 13:10		
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 13:10		
Bromoform	ND	ug/L	0.50	1		01/06/17 13:10		
Bromomethane	ND	ug/L	0.50	1		01/06/17 13:10		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 13:10		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 13:10	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 13:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 13:10	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 13:10	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 13:10	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 13:10	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 13:10	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 13:10	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 13:10	106-93-4	
		-						
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 13:10) 75-71-8	
Dichlorodifluoromethane 1,1-Dichloroethane	ND ND	ug/L ug/L	1.0 0.50	1 1		01/06/17 13:10 01/06/17 13:10		

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: DUP004	Lab ID: 204	8198007	Collected: 01/03/1	7 00:00	Received: 01	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 13:10) 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 13:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:10	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 13:10	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 13:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 13:10	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 13:10		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 13:10		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 13:10		
Methyl-tert-butyl ether	8.9	ug/L	0.50	1		01/06/17 13:10		
Styrene	ND	ug/L	1.0	1		01/06/17 13:10		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 13:10		
Tetrachloroethene	ND ND	ug/L ug/L	0.50	1		01/06/17 13:10		
Toluene	ND ND	ug/L ug/L	0.50	1		01/06/17 13:10		
1,1,1-Trichloroethane	ND ND	•	0.50	1		01/06/17 13:10		
, ,		ug/L						
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:10		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 13:10		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 13:10		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 13:10		
m&p-Xylene	ND	ug/L	2.0	1) 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 13:10	95-47-6	
Surrogates	400	0.4	70.400			04/00/47 40 40	4000 50 7	
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 13:10		
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 13:10		
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 13:10	2037-26-5	
Sample: MW-EB106	Lab ID: 204	8198008	Collected: 01/03/1	7 14:28	Received: 01	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Metl	nod: EPA 80	O15B Modified Prepa	ration M	lethod: EPA 3535	 5		
Diesel Range Organic (C10-C28)	0.26	mg/L	0.25	1	01/06/17 07:40	01/11/17 22:06	3	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1		01/11/17 22:06		
n-Pentacosane (S)	50	%.	16-137	1	01/06/17 07:40	01/11/17 22:06	629-99-2	
o-Terphenyl (S)	66	%.	10-121	1		01/11/17 22:06		
8021 GCV BTEX, MTBE, GRO	Analytical Meth							
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 18:34	1	
Surrogates		-						
4-Bromofluorobenzene (S)	86	%.	44-148	1		01/12/17 18:34		



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB106	Lab ID: 2048	3198008	Collected: 01/03/1	7 14:28	Received: 01	/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Met	nod: EPA	3010			
Arsenic	0.0014	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7440-47-3	
₋ead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:19	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Met	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7440-38-2	
Chromium, Dissolved	30.6	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:50	7440-62-2	
470 Mercury	Analytical Meth	od: EPA 74	470 Preparation Metl	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:32	2 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	470 Preparation Met	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:28	7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
cenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	83-32-9	
cenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	208-96-8	
nthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	120-12-7	
enzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	56-55-3	
enzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	50-32-8	
enzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	205-99-2	
enzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40) 191-24-2	
enzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	207-08-9	
hrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	218-01-9	
ibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	53-70-3	
luoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	206-44-0	
luorene	ND	ug/L	0.10	1	01/06/17 09:20			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20			
-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20			
aphthalene	ND	ug/L	0.10	1	01/06/17 09:20			
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20			
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20			
Surrogates	NB	ug/ L	0.10	•	01/00/17 00:20	01/10/17 10:40	120 00 0	
-Fluorobiphenyl (S)	99	%.	25-150	1	01/06/17 09:20	01/10/17 13:40	321-60-8	
erphenyl-d14 (S)	100	%.	25-150	1	01/06/17 09:20			
260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
cetone	16.4	ug/L	4.0	1		01/06/17 13:28	8 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 13:28	3 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 13:28		
Bromoform	ND	ug/L	0.50	1		01/06/17 13:28		
Bromomethane	ND	ug/L	0.50	1		01/06/17 13:28		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 13:28		

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB106	Lab ID: 204	8198008	Collected: 01/03/1	7 14:28	Received:	01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 13:28	3 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 13:28	3 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 13:28	3 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 13:28	3 75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 13:28	8 67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 13:28	3 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 13:28	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 13:28	3 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 13:28	3 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 13:28	3 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 13:28	3 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 13:28	3 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:28	3 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 13:28	3 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:28	3 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 13:28		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:28		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:28	3 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 13:28		
2-Hexanone	ND	ug/L	1.0	1		01/06/17 13:28		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 13:28		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 13:28		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 13:28		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 13:28		
Methyl-tert-butyl ether	4.3	ug/L	0.50	1		01/06/17 13:28		
Styrene	ND	ug/L	1.0	1		01/06/17 13:28		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 13:28		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 13:28		
Toluene	ND	ug/L	0.50	1		01/06/17 13:28		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:28		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:28		
Trichloroethene	ND ND	ug/L	0.50	1		01/06/17 13:28		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 13:28		
/inyl chloride	ND	ug/L	0.50	1		01/06/17 13:28		
m&p-Xylene	ND ND	ug/L	2.0	1		01/06/17 13:28		
o-Xylene	ND ND	ug/L ug/L	1.0	1		01/06/17 13:28		
Surrogates	טוו	ug/L	1.0	'		01/00/11 13.20	, 30 -41- 0	
Dibromofluoromethane (S)	107	%.	72-126	1		01/06/17 13:28	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 13:28		
Toluene-d8 (S)	99	%.	79-119	1		01/06/17 13:28		



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: MW-EB107	Lab ID: 204	8198009	Collected: 01/03/1	7 15:11	Received: 01	/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 22:34	ļ	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 22:34	ļ	
n-Pentacosane (S)	48	%.	16-137	1	01/06/17 07:40	01/11/17 22:34	629-99-2	
p-Terphenyl (S)	51	%.	10-121	1	01/06/17 07:40	01/11/17 22:34	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	15/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 21:11		
4-Bromofluorobenzene (S)	85	%.	44-148	1		01/12/17 21:11	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:23	3 7440-38-2	
Chromium	0.0013	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:23	3 7440-47-3	
_ead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:23	3 7439-92-1	
/anadium	ND	mg/L	0.0050	1		01/13/17 22:23		
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	•	20 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND		1.0	1		01/13/17 23:54	1 7440 20 2	
Chromium, Dissolved	ND ND	ug/L ug/L	1.0	1		01/13/17 23:54		
•		J						
Lead, Dissolved /anadium, Dissolved	ND ND	ug/L	1.0 5.0	1 1		01/13/17 23:5 ² 01/13/17 23:5 ²		
variadium, Dissolved		ug/L				01/13/17 23.52	1 7440-02-2	
7470 Mercury	-	nod: EPA 74	70 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:34	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:30	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	70 by SIM Preparati	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00) 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/10/17 14:00		
Fluoranthene	ND	ug/L	0.10	1		01/10/17 14:00		
Fluorene	ND	ug/L	0.10	1		01/10/17 14:00		
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/10/17 14:00		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/10/17 14:00		
• •	ND	ug/L	0.10	1	01/06/17 09:20			
Naphthalene								



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: MW-EB107	Lab ID: 204	8198009	Collected: 01/03/1	7 15:11	Received: 01	/04/17 15:08 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparati	on Meth	nod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	99	%.	25-150	1	01/06/17 09:20			
Terphenyl-d14 (S)	100	%.	25-150	1	01/06/17 09:20	01/10/17 14:00	1718-51-0	
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Acetone	ND	ug/L	4.0	1		01/06/17 13:46	67-64-1	
Benzene	ND	ug/L	0.50	1		01/06/17 13:46	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 13:46	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 13:46	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 13:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 13:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 13:46	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 13:46		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 13:46	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 13:46	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 13:46	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 13:46		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 13:46		
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 13:46		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 13:46	_	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 13:46		
,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 13:46		
1,2-Dichloroethane	0.61	ug/L	0.50	1		01/06/17 13:46		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:46		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 13:46		
rans-1,2-Dichloroethene	ND ND		0.50	1		01/06/17 13:46		
·		ug/L						
I,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 13:46		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:46		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:46		
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 13:46		
2-Hexanone	ND	ug/L	1.0	1		01/06/17 13:46		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 13:46		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 13:46		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 13:46		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 13:46		
Methyl-tert-butyl ether	1.6	ug/L	0.50	1		01/06/17 13:46		
Styrene	ND	ug/L	1.0	1		01/06/17 13:46		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 13:46		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 13:46		
Toluene	ND	ug/L	0.50	1		01/06/17 13:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:46	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 13:46	79-01-6	
richlorofluoromethane	ND	ug/L	0.50	1		01/06/17 13:46	75-69-4	
/inyl chloride	ND	ug/L	0.50	1		01/06/17 13:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 13:46		

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB107	Lab ID: 2048	3198009	Collected: 01/03/1	7 15:11	Received: 0)1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		01/06/17 13:4	6 95-47-6	
Dibromofluoromethane (S)	109	%.	72-126	1		01/06/17 13:4	6 1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 13:4		
Foluene-d8 (S)	100	%.	79-119	1		01/06/17 13:4		
Sample: MW-EB108	Lab ID: 204	3198010	Collected: 01/03/1	7 16:01	Received: 0	01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	od: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	35	•	
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	0 01/11/17 23:02	2	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1		0 01/11/17 23:02		
n-Pentacosane (S)	51	%.	16-137	1	01/06/17 07:40	0 01/11/17 23:02	2 629-99-2	
p-Terphenyl (S)	55	%.	10-121	1	01/06/17 07:40	0 01/11/17 23:02	2 84-15-1	
3021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 21:3	7	
4-Bromofluorobenzene (S)	86	%.	44-148	1		01/12/17 21:3	7 460-00-4	
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	2 01/13/17 22:2	7 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	2 01/13/17 22:2	7 7440-47-3	
∟ead	ND	mg/L	0.0010	1	01/09/17 15:32	2 01/13/17 22:2	7 7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	2 01/13/17 22:2	7 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	4 01/13/17 23:5	8 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	4 01/13/17 23:5	8 7440-47-3	
₋ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	4 01/13/17 23:5	8 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	4 01/13/17 23:5	8 7440-62-2	
7470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	9 01/09/17 20:3	6 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	0 01/10/17 17:3	2 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	0 01/10/17 14:2	0 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1		0 01/10/17 14:2		
Anthracene	ND	ug/L	0.10	1		0 01/10/17 14:2	-	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	0 01/10/17 14:2	0 56-55-3	



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: MW-EB108	Lab ID: 204	8198010	Collected: 01/03/1	7 16:01	Received: 01	/04/17 15:08 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparation	on Meth	od: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	129-00-0	
Surrogates		-						
2-Fluorobiphenyl (S)	100	%.	25-150	1	01/06/17 09:20	01/10/17 14:20	321-60-8	
Геrphenyl-d14 (S)	102	%.	25-150	1	01/06/17 09:20	01/10/17 14:20	1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Acetone	5.9	ug/L	4.0	1		01/06/17 14:03	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 14:03	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 14:03	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 14:03	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 14:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 14:03	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 14:03	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:03	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:03	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:03	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 14:03	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:03		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 14:03	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 14:03	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 14:03		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 14:03		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:03		
,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:03		
,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:03		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:03		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:03		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:03		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:03		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:03		
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:03		
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:03		
- I IOAdi IOHE		•						
sonronylhenzene (Cumena)	ND	[1/1/1	7 ()					
sopropylbenzene (Cumene) Methyl acetate	ND ND	ug/L ug/L	1.0 2.0	1 1		01/06/17 14:03 01/06/17 14:03		



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB108	Lab ID: 2048	3198010	Collected: 01/03/1	7 16:01	Received: 0	1/04/17 15:08 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:03	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 14:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:03	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:03	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 14:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:03	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:03	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:03	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:03	95-47-6	
Surrogates		Ü						
Dibromofluoromethane (S)	107	%.	72-126	1		01/06/17 14:03	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 14:03	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/06/17 14:03	2037-26-5	
Sample: FB-010317	Lab ID: 2048	3198011	Collected: 01/03/1	7 16:10	Received: 0	1/04/17 15:08 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 80	 015/8021				-	
• •				4		04/40/47 40:00		
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 19:00		
Surrogates 4-Bromofluorobenzene (S)	86	%.	44-148	1		01/12/17 19:00	460-00-4	
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	12.8	ug/L	4.0	1		04/00/47 44 04		C9
Benzene			4.0			01/06/17 14:21	67-64-1	
	ND	ua/L						
	ND ND	ug/L ug/L	0.50	1		01/06/17 14:21	71-43-2	
Bromodichloromethane	ND	ug/L	0.50 0.50	1 1			71-43-2 75-27-4	
Bromodichloromethane Bromoform		ug/L ug/L	0.50	1		01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2	
Bromodichloromethane Bromoform Bromomethane	ND ND	ug/L ug/L ug/L	0.50 0.50 0.50	1 1 1		01/06/17 14:21 01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9	
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK)	ND ND ND	ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50	1 1 1		01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3	L3
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide	ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50 2.0 1.0	1 1 1 1 1		01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0	L3
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride	ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50 2.0 1.0	1 1 1 1 1 1		01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5	L3
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene	ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50 2.0 1.0 0.50	1 1 1 1 1		01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7	L3
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane	ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50 2.0 1.0	1 1 1 1 1 1 1		01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3	L3
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform	ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50	1 1 1 1 1 1 1 1 1		01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3	L3
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane	ND ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1		01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3	L3
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane	ND N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1 1		01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8	L3
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane	ND N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1 1 1		01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1	L3
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane (EDB)	ND N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1 1 1 1 1		01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1 106-93-4	L3
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane (EDB) Dichlorodifluoromethane 1,1-Dichloroethane	ND N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1 1 1		01/06/17 14:21 01/06/17 14:21	71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1 106-93-4 75-71-8	L3



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: FB-010317	Lab ID: 204	8198011	Collected: 01/03/1	7 16:10	Received: (01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:2	1 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:2	1 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:2	1 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:2	1 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:2	1 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:2	1 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:2	1 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:2	1 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 14:2	1 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 14:2		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:2		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:2		
Styrene	ND	ug/L	1.0	1		01/06/17 14:2		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:2		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:2		
Toluene	ND ND	ug/L ug/L	0.50	1		01/06/17 14:2	_	
	ND ND	-	0.50	1		01/06/17 14:2		
1,1,1-Trichloroethane		ug/L						
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:2		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:2		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:2		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:2		
m&p-Xylene	ND	ug/L	2.0	1			1 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:2	1 95-47-6	
Surrogates	105	%.	72-126	1		04/06/47 44:0	1 1868-53-7	
Dibromofluoromethane (S)	105 98	%. %.		1		01/06/17 14:2		
4-Bromofluorobenzene (S)			68-124			01/06/17 14:2		
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 14:2	1 2037-20-5	
Sample: TB-010417	Lab ID: 204	8198012	Collected: 01/04/1	7 00:00	Received: (01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 22:0	3	
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/12/17 22:0	3 460-00-4	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
	169	ug/L	4.0	1		01/06/17 14:3	9 67-64-1	
Acetone		-	0.50	1		01/06/17 14:3	9 71-43-2	
	ND	ug/L	0.00					
Benzene	ND ND	ug/L ug/L	0.50	1		01/06/17 14:3	9 75-27-4	
Benzene Bromodichloromethane		ug/L		1 1		01/06/17 14:3 01/06/17 14:3		
Acetone Benzene Bromodichloromethane Bromoform Bromomethane	ND	ug/L ug/L	0.50				9 75-25-2	
Benzene Bromodichloromethane Bromoform	ND ND	ug/L	0.50 0.50	1		01/06/17 14:3	9 75-25-2 9 74-83-9	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: TB-010417	Lab ID: 20	048198012	Collected: 01/04/1	7 00:00	Received: 0	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical M	ethod: EPA 50	030B/8260					
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:39	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:39	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:39	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 14:39	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:39	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 14:39	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 14:39	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 14:39	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 14:39		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:39		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:39		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:39		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:39		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:39		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:39		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:39		
trans-1,3-Dichloropropene	ND ND	ug/L	0.50	1		01/06/17 14:39		
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:39		
2-Hexanone	ND	ug/L ug/L	1.0	1		01/06/17 14:39		
	ND	•		1		01/06/17 14:39		
Isopropylbenzene (Cumene)		ug/L	1.0					
Methylaga Chlarida	ND	ug/L	2.0	1		01/06/17 14:39		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:39		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:39		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:39		
Styrene	ND	ug/L	1.0	1		01/06/17 14:39		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:39		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:39		
Toluene	ND	ug/L	0.50	1		01/06/17 14:39		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:39		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:39		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:39	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:39	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:39	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:39	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:39	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 14:39		
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 14:39	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/06/17 14:39	2037-26-5	
Sample: EB-010417	Lab ID: 20)48198013	Collected: 01/04/1	7 08:58	Received: 0	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical M	ethod: EPA 80	O15B Modified Prepa	ration Me	ethod: EPA 353	 35		
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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: EB-010417	Lab ID: 2048198013		Collected: 01/04/17 08:58		Received: 01	/04/17 15:08	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
8015M DRO/ORO Organics	Analytical Meth	od: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5			
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 23:30)		
n-Pentacosane (S)	48	%.	16-137	1	01/06/17 07:40	01/11/17 23:30	629-99-2		
p-Terphenyl (S)	50	%.	10-121	1	01/06/17 07:40	01/11/17 23:30	84-15-1		
021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021								
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 22:29	9		
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/12/17 22:29	9 460-00-4		
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	3010				
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:3	1 7440-38-2		
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:31	1 7440-47-3		
₋ead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:3	1 7439-92-1		
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:3	7440-62-2		
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	3005A				
rsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:0	1 7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:0	1 7440-47-3		
ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:0	1 7439-92-1		
/anadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:0	1 7440-62-2		
470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	7470				
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:38	3 7439-97-6		
470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	7470				
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:34	4 7439-97-6		
3270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510				
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	9 83-32-9		
cenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	9 208-96-8		
nthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	9 120-12-7		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	9 56-55-3		
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	9 50-32-8		
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	9 205-99-2		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27				
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	9 207-08-9		
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27				
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27				
luoranthene	ND	ug/L	0.10	1	01/07/17 13:27				
luorene	ND	ug/L	0.10	1	01/07/17 13:27				
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27				
!-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27				
laphthalene	ND	ug/L	0.10	1	01/07/17 13:27				
	110	-							
Phenanthrene	ND	ug/L	0.10	1	()1/()//1/ 13.7/	01/10/17 17:59) 85-01-8		



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: EB-010417	Lab ID: 2048198013		Collected: 01/04/17 08:58		Received: 01/04/17 15:08		Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
8270 MSSV PAH by SIM SEP	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Surrogates	104	0/	25 450	4	04/07/47 42:27	04/40/47 47:50	224 60 8		
2-Fluorobiphenyl (S)	104 103	%. %.	25-150 25-150	1 1		01/10/17 17:59 01/10/17 17:59			
Terphenyl-d14 (S)	103	70.	25-150	'	01/01/11 13.21	01/10/17 17.59	1710-31-0		
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260						
Acetone	18.0	ug/L	4.0	1		01/06/17 14:56	67-64-1	C9	
Benzene	ND	ug/L	0.50	1		01/06/17 14:56	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 14:56	75-27-4		
Bromoform	ND	ug/L	0.50	1		01/06/17 14:56	75-25-2		
Bromomethane	ND	ug/L	0.50	1		01/06/17 14:56	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 14:56	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 14:56	75-15-0	L3	
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:56	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:56	108-90-7		
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:56			
Chloroform	ND	ug/L	0.50	1		01/06/17 14:56			
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:56			
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 14:56			
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 14:56			
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 14:56			
Dichlorodifluoromethane	ND ND	ug/L ug/L	1.0	1		01/06/17 14:56			
,1-Dichloroethane	ND ND	ug/L ug/L	0.50	1		01/06/17 14:56			
1,2-Dichloroethane	ND ND	•	0.50	1		01/06/17 14:56			
,		ug/L		1					
I,1-Dichloroethene	ND ND	ug/L	0.50 1.0	1		01/06/17 14:56			
cis-1,2-Dichloroethene		ug/L				01/06/17 14:56			
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:56			
I,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:56			
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:56			
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:56			
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:56			
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:56			
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 14:56			
Methyl acetate	ND	ug/L	2.0	1		01/06/17 14:56			
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:56			
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:56	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:56	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/06/17 14:56	100-42-5		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:56	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:56	127-18-4		
Toluene	ND	ug/L	0.50	1		01/06/17 14:56	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:56	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:56	79-00-5		
Frichloroethene	ND	ug/L	0.50	1		01/06/17 14:56	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:56			
/inyl chloride	ND	ug/L	0.50	1		01/06/17 14:56			
n&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:56			
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:56			



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: EB-010417	Lab ID: 204	8198013	Collected: 01/04/1	7 08:58	Received: 0	1/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua		
260 MSV Low Level	Analytical Method: EPA 5030B/8260									
Surrogates										
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 14:56				
1-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 14:56				
oluene-d8 (S)	101	%.	79-119	1		01/06/17 14:56	5 2037-26-5			
Sample: MW-DP1	Lab ID: 2048198014		Collected: 01/04/17 09:36		Received: 0	1/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua		
8015M DRO/ORO Organics	Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535									
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 23:58	3			
Dil Range Organics (>C28-C40)	ND	mg/L	0.50	1		01/11/17 23:58				
Surrogates		···· <i>y</i> · =	0.00	-		2 25.00				
n-Pentacosane (S)	41	%.	16-137	1	01/06/17 07:40	01/11/17 23:58	8 629-99-2			
-Terphenyl (S)	53	%.	10-121	1	01/06/17 07:40	01/11/17 23:58	84-15-1			
021 GCV BTEX, MTBE, GRO	Analytical Metl	nod: EPA 80	015/8021							
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 22:56	6			
-Bromofluorobenzene (S)	87	%.	44-148	1		01/12/17 22:56	6 460-00-4			
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:3	7440-38-2			
Chromium	0.0013	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:3	5 7440-47-3			
ead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:3	5 7439-92-1			
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:3	7440-62-2			
020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A					
arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:0	5 7440-38-2			
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:0	5 7440-47-3			
ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:0	5 7439-92-1			
/anadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:0	7440-62-2			
470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470					
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:40	7439-97-6			
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470					
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:36	7439-97-6			
270 MSSV PAH by SIM SEP		nod: EPA 82	270 by SIM Preparati		od: EPA 3510					
Acenaphthene	ND	ug/L	0.10	1		01/10/17 18:19				
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	9 208-96-8			
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	9 120-12-7			
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	9 56-55-3			
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	9 50-32-8			



Project: PUMA TERMINAL MW-SAMPLING

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Parameters 2270 MSSV PAH by SIM SEP Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenz(a,h)anthracene Fluoranthene	Analytical Meth ND ND ND ND ND ND ND ND	Units nod: EPA 82 ug/L ug/L	Report Limit - 270 by SIM Preparati 0.10	DF on Meth	Prepared	Analyzed	CAS No.	Qua
Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenz(a,h)anthracene	ND ND ND	ug/L		on Meth	od: EDA 3510			
Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenz(a,h)anthracene	ND ND	-	0.10		ou. EFA 3310			
Benzo(k)fluoranthene Chrysene Dibenz(a,h)anthracene	ND	ug/L		1	01/07/17 13:27	01/10/17 18:19	205-99-2	
Chrysene Dibenz(a,h)anthracene			0.10	1	01/07/17 13:27	01/10/17 18:19	191-24-2	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	207-08-9	
		ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	218-01-9	
	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	53-70-3	
luoraritricric	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	206-44-0	
luorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	193-39-5	
P-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	91-57-6	
laphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	85-01-8	
Pyrene	ND	ug/L	0.10	1		01/10/17 18:19		
Surrogates		- 	20					
2-Fluorobiphenyl (S)	95	%.	25-150	1	01/07/17 13:27	01/10/17 18:19	321-60-8	
erphenyl-d14 (S)	94	%.	25-150	1	01/07/17 13:27	01/10/17 18:19	1718-51-0	
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
cetone	8.2	ug/L	4.0	1		01/06/17 15:14	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 15:14	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 15:14	75-27-4	
romoform	ND	ug/L	0.50	1		01/06/17 15:14	75-25-2	
romomethane	ND	ug/L	0.50	1		01/06/17 15:14		
-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 15:14		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 15:14		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 15:14		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 15:14		
Chloroethane	ND	ug/L	0.50	1		01/06/17 15:14		
Chloroform	ND	ug/L	0.50	1		01/06/17 15:14		
Chloromethane	ND	ug/L	0.50	1		01/06/17 15:14		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 15:14		
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 15:14		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 15:14		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 15:14		
,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:14		
,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:14		
,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:14		
is-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 15:14		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:14		
,2-Dichloropropane	ND ND	ug/L	0.50	1		01/06/17 15:14		
is-1,3-Dichloropropene	ND ND	ug/L	0.50	1		01/06/17 15:14		
ans-1,3-Dichloropropene	ND ND	ug/L ug/L	0.50	1		01/06/17 15:14		
thylbenzene	ND ND	ug/L ug/L	0.50	1		01/06/17 15:14		
:Inyiberizene :-Hexanone	ND ND	•		1		01/06/17 15:14		
		ug/L	1.0			01/06/17 15:14		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1				
Methyl acetate	ND ND	ug/L	2.0	1		01/06/17 15:14		
Methylene Chloride I-Methyl-2-pentanone (MIBK)	ND ND	ug/L ug/L	0.50 1.0	1 1		01/06/17 15:14 01/06/17 15:14		



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-DP1	Lab ID: 204	8198014	Collected: 01/04/1	7 09:36	Received: 01	/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	30B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 15:14	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 15:14	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 15:14	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 15:14	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 15:14	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:14		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 15:14		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 15:14		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 15:14		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 15:14		
o-Xylene	ND	ug/L	1.0	1		01/06/17 15:14		
Surrogates	ND	ug/L	1.0			01/00/17 13.14	33 47 0	
Dibromofluoromethane (S)	107	%.	72-126	1		01/06/17 15:14	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 15:14		
Toluene-d8 (S)	99	%.	79-119	1		01/06/17 15:14		
10.00.10 00 (0)		701		•		0.700, 1. 1011	200. 20 0	
Sample: MW-MP2	Lab ID: 204	8198015	Collected: 01/04/1	7 10:25	Received: 01	/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration Mo	ethod: EPA 3535	;		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 01:21		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40			
Surrogates	ND	1119/ =	0.00	•	01/00/17 07.40	01/12/17 01.21		
n-Pentacosane (S)	24	%.	16-137	1	01/06/17 07:40	01/12/17 01:21	629-99-2	
o-Terphenyl (S)	43	%.	10-121	1				
8021 GCV BTEX, MTBE, GRO	.0	,			U1/U0/1/ U/:4U	01/12/17 01:21	84-15-1	
	Analytical Meth	nod: EPA 80		'	01/06/17 07.40	01/12/17 01:21	84-15-1	
Gasoline Range Organics	Analytical Meth		15/8021		01/06/17 07.40			
Gasoline Range Organics Surrogates	Analytical Meth	nod: EPA 80 ug/L		1	01/06/17 07.40	01/12/17 01:21		
Surrogates	•		15/8021		01/06/17 07.40			
Surrogates 4-Bromofluorobenzene (S)	ND 89	ug/L %.	15/8021 50.0	1		01/12/17 23:22		
Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS	ND 89	ug/L %.	15/8021 50.0 44-148	1 1 nod: EPA		01/12/17 23:22 01/12/17 23:22	460-00-4	
Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic	ND 89 Analytical Meth	ug/L %. nod: EPA 60 mg/L	15/8021 50.0 44-148 20 Preparation Meth	1 1 nod: EPA	. 3010	01/12/17 23:22 01/12/17 23:22 01/13/17 22:39	460-00-4 7440-38-2	
Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium	ND 89 Analytical Meth ND	ug/L %. nod: EPA 60 mg/L mg/L	15/8021 50.0 44-148 20 Preparation Meth 0.0010 0.0010	1 1 nod: EPA 1	. 3010 01/09/17 15:32	01/12/17 23:22 01/12/17 23:22 01/13/17 22:39 01/13/17 22:39	460-00-4 7440-38-2 7440-47-3	
Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead	ND 89 Analytical Meth ND 0.0013	ug/L %. nod: EPA 60 mg/L	15/8021 50.0 44-148 20 Preparation Meth 0.0010	1 1 nod: EPA 1 1	.3010 01/09/17 15:32 01/09/17 15:32	01/12/17 23:22 01/12/17 23:22 01/13/17 22:39 01/13/17 22:39 01/13/17 22:39	460-00-4 7440-38-2 7440-47-3 7439-92-1	
Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium	ND 89 Analytical Meth ND 0.0013 ND 0.012	ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	15/8021 50.0 44-148 20 Preparation Meth 0.0010 0.0010 0.0010	1 1 nod: EPA 1 1 1	.3010 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32	01/12/17 23:22 01/12/17 23:22 01/13/17 22:39 01/13/17 22:39 01/13/17 22:39	460-00-4 7440-38-2 7440-47-3 7439-92-1	
Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	ND 89 Analytical Meth ND 0.0013 ND 0.012 Analytical Meth	ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L ood: EPA 60	15/8021 50.0 44-148 20 Preparation Meth 0.0010 0.0010 0.0050 20 Preparation Meth	1 1 nod: EPA 1 1 1 1 nod: EPA	.3010 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 .3005A	01/12/17 23:22 01/12/17 23:22 01/13/17 22:39 01/13/17 22:39 01/13/17 22:39 01/13/17 22:39	460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	
Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	ND 89 Analytical Meth ND 0.0013 ND 0.012 Analytical Meth	ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L nod: EPA 60 ug/L	15/8021 50.0 44-148 20 Preparation Meth 0.0010 0.0010 0.0050 20 Preparation Meth 1.0	1 1 nod: EPA 1 1 1 nod: EPA	. 3010 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 . 3005A 01/10/17 11:44	01/12/17 23:22 01/12/17 23:22 01/13/17 22:39 01/13/17 22:39 01/13/17 22:39 01/13/17 00:09	460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	
Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved	ND 89 Analytical Meth ND 0.0013 ND 0.012 Analytical Meth ND	ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L od: EPA 60 ug/L ug/L	15/8021 50.0 44-148 20 Preparation Meth 0.0010 0.0010 0.0050 20 Preparation Meth 1.0 1.0	1 1 nod: EPA 1 1 1 nod: EPA 1	3010 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 3005A 01/10/17 11:44 01/10/17 11:44	01/12/17 23:22 01/12/17 23:22 01/13/17 22:39 01/13/17 22:39 01/13/17 22:39 01/13/17 00:09 01/14/17 00:09	7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2 7440-47-3	
Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	ND 89 Analytical Meth ND 0.0013 ND 0.012 Analytical Meth	ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L nod: EPA 60 ug/L	15/8021 50.0 44-148 20 Preparation Meth 0.0010 0.0010 0.0050 20 Preparation Meth 1.0	1 1 nod: EPA 1 1 1 nod: EPA	. 3010 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 01/09/17 15:32 . 3005A 01/10/17 11:44	01/12/17 23:22 01/12/17 23:22 01/13/17 22:39 01/13/17 22:39 01/13/17 22:39 01/13/17 00:09 01/14/17 00:09 01/14/17 00:09	7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2 7440-47-3 7439-92-1	



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Pace Project No.: 2048198								
Sample: MW-MP2	Lab ID: 204	8198015	Collected: 01/04/17	10:25	Received: 01	/04/17 15:08 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Metho	od: EP/	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:42	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Metl	hod: EPA 7	470 Preparation Metho	od: EP/	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:38	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparatio	n Meth	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1		01/10/17 18:39		
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/10/17 18:39		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/10/17 18:39		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/10/17 18:39		
Chrysene	ND ND	ug/L	0.10	1		01/10/17 18:39		
•		_						
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/10/17 18:39		
Fluoranthene	ND	ug/L	0.10	1		01/10/17 18:39		
Fluorene	ND	ug/L	0.10	1		01/10/17 18:39		
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/10/17 18:39		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/10/17 18:39		
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	88	%.	25-150	1	01/07/17 13:27	01/10/17 18:39	321-60-8	
Terphenyl-d14 (S)	90	%.	25-150	1	01/07/17 13:27	01/10/17 18:39	1718-51-0	
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	9.4	ug/L	4.0	1		01/06/17 15:32		C9
Benzene	ND	ug/L	0.50	1		01/06/17 15:32	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 15:32	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 15:32	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 15:32	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 15:32	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 15:32	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 15:32		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 15:32		
Chloroethane	ND	ug/L	0.50	1		01/06/17 15:32		
Chloroform	ND	ug/L	0.50	1		01/06/17 15:32		
Chloromethane	ND ND	ug/L	0.50	1		01/06/17 15:32		
1,2-Dibromo-3-chloropropane	ND ND	ug/L ug/L	0.20	1		01/06/17 15:32		
Dibromochloromethane		_						
	ND ND	ug/L	0.50	1		01/06/17 15:32		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 15:32		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 15:32		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:32		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	107-06-2	



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-MP2	Lab ID: 204	8198015	Collected: 01/04/1	7 10:25	Received: 01	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:32	2 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 15:32	2 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:32	2 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 15:32	2 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:32	2 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:32	2 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 15:32	2 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 15:32	2 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 15:32	2 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 15:32		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 15:32		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 15:32		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 15:32		
Styrene	ND	ug/L	1.0	1		01/06/17 15:32		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 15:32		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 15:32		
Toluene	ND ND	ug/L ug/L	0.50	1		01/06/17 15:32		
1,1,1-Trichloroethane	ND ND	•	0.50	1		01/06/17 15:32		
, ,		ug/L						
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:32		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 15:32		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 15:32		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 15:32		
m&p-Xylene	ND	ug/L	2.0	1			2 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 15:32	2 95-47-6	
Surrogates	400	0.4	70.400			04/00/47 45 00	4000 50 7	
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 15:32		
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 15:32		
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 15:32	2 2037-26-5	
Sample: MW-MP3	Lab ID: 204	8198016	Collected: 01/04/1	7 11:46	Received: 01	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80)15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 01:49)	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1		01/12/17 01:49		
n-Pentacosane (S)	21	%.	16-137	1	01/06/17 07:40	01/12/17 01:49	629-99-2	
o-Terphenyl (S)	36	%.	10-121	1		01/12/17 01:49		
8021 GCV BTEX, MTBE, GRO	Analytical Meth			•	51,00,11 01.40	51,12,11 01.70	, 31 10 1	
, ,	,	ug/L	50.0	1		01/12/17 23:49	1	
Gasolina Ranga Organics								
Gasoline Range Organics Surrogates	ND	ug/L	50.0	'		01/12/17 23.48	9	



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: MW-MP3	Lab ID: 2048	3198016	Collected: 01/04/1	7 11:46	Received: 01	/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EPA	\ 3010			
Arsenic	0.0096	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:43	7440-38-2	
Chromium	0.0036	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:43	7440-47-3	
Lead	0.022	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:43	7439-92-1	
Vanadium	0.010	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:43	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:13	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:13	7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:13	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:13	7440-62-2	
7470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:44	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	70 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:45	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	70 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	208-96-8	
anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/11/17 13:32		
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27			
Naphthalene	ND	ug/L	0.10	1		01/11/17 13:32		
Phenanthrene	ND	ug/L	0.10	1		01/11/17 13:32		
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27			
Surrogates	ND	ug/L	0.10	•	01/01/11 10.21	01/11/17 10:02	120 00 0	
2-Fluorobiphenyl (S)	90	%.	25-150	1	01/07/17 13:27	01/11/17 13:32	321-60-8	
Terphenyl-d14 (S)	82	%.	25-150	1	01/07/17 13:27			
3260 MSV Low Level	Analytical Meth	od: EPA 50	30B/8260					
Acetone	4.9	ug/L	4.0	1		01/06/17 15:50	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 15:50		•
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 15:50		
Bromoform	ND	ug/L	0.50	1		01/06/17 15:50		
Bromomethane	ND	ug/L	0.50	1		01/06/17 15:50		
2-Butanone (MEK)	ND ND	ug/L ug/L	2.0	1		01/06/17 15:50		

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Parameters 8260 MSV Low Level Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane	Analytical Meth ND ND ND ND ND	ug/L ug/L	Report Limit 030B/8260	DF	Prepared	Analyzed	CAS No.	Qua
Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane	ND ND ND	ug/L ug/L						
Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane	ND ND	ug/L	1.0					
Chlorobenzene Chloroethane Chloroform Chloromethane	ND	-		1		01/06/17 15:50	75-15-0	L3
Chloroethane Chloroform Chloromethane			0.50	1		01/06/17 15:50	56-23-5	
Chloroform Chloromethane	ND	ug/L	0.50	1		01/06/17 15:50	108-90-7	
Chloromethane		ug/L	0.50	1		01/06/17 15:50	75-00-3	
	ND	ug/L	0.50	1		01/06/17 15:50	67-66-3	
,2-Dibromo-3-chloropropane	ND	ug/L	0.50	1		01/06/17 15:50	74-87-3	
	ND	ug/L	0.20	1		01/06/17 15:50	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 15:50	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 15:50	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 15:50	75-71-8	
,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:50	75-34-3	
,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:50	107-06-2	
,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:50	75-35-4	
ris-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 15:50	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:50	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 15:50		
sis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:50		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:50		
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 15:50		
2-Hexanone	ND	ug/L	1.0	1		01/06/17 15:50		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 15:50		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 15:50		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 15:50		
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 15:50		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 15:50		
Styrene	ND	ug/L	1.0	1		01/06/17 15:50		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 15:50		
etrachloroethene	ND	ug/L	0.50	1		01/06/17 15:50		
Toluene	ND	ug/L	0.50	1		01/06/17 15:50		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:50		
,1,2-Trichloroethane	ND ND	-	0.50	1		01/06/17 15:50		
richloroethene	ND ND	ug/L ug/L	0.50	1		01/06/17 15:50		
richlorofluoromethane	ND ND	-	0.50	1		01/06/17 15:50		
	ND ND	ug/L		1				
/inyl chloride		ug/L	0.50	1		01/06/17 15:50		
n&p-Xylene	ND	ug/L	2.0			01/06/17 15:50		
o-Xylene Surrogates	ND	ug/L	1.0	1		01/06/17 15:50	95-47-6	
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 15:50	1868-53-7	
-Bromofluorobenzene (S)	98	%. %.	68-124	1		01/06/17 15:50		
Foluene-d8 (S)	100	%. %.	79-119	1		01/06/17 15:50		



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: MW-MP8	Lab ID: 204	8198017	Collected: 01/04/1	7 13:33	Received: 01	1/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80)15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 00:26	6	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/12/17 00:26	3	
n-Pentacosane (S)	60	%.	16-137	1	01/06/17 07:40	01/12/17 00:26	6 629-99-2	
p-Terphenyl (S)	58	%.	10-121	1	01/06/17 07:40	01/12/17 00:26	84-15-1	
3021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/13/17 00:16	5	
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/13/17 00:16	6 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	A 3010			
Arsenic	0.0019	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:55	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:55	7440-47-3	
_ead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:55	7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:55	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	1.3	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:17	7 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/14/17 00:17		
Lead, Dissolved	ND	ug/L	1.0	1		01/14/17 00:17		
/anadium, Dissolved	ND	ug/L	5.0	1		01/14/17 00:17		
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:50	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:47	7 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	9 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1		01/10/17 18:59		
Anthracene	ND	ug/L	0.10	1		01/10/17 18:59		
Benzo(a)anthracene	ND	ug/L	0.10	1		01/10/17 18:59	-	
Benzo(a)pyrene	ND	ug/L	0.10	1		01/10/17 18:59		
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/10/17 18:59		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/10/17 18:59		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/10/17 18:59		
` '	ND ND		0.10	1		01/10/17 18:59		
Chrysene	ND ND	ug/L	0.10	1		01/10/17 18:59		
Dibenz(a,h)anthracene Fluoranthene		ug/L						
	ND	ug/L	0.10	1		01/10/17 18:59		
Fluorene	ND	ug/L	0.10	1		01/10/17 18:59		
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/10/17 18:59		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/10/17 18:59		
Naphthalene	ND	ug/L	0.10	1		01/10/17 18:59		
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	9 85-01-8	



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: MW-MP8	Lab ID: 204	8198017	Collected: 01/04/1	7 13:33	Received: 01	I/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	nod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	25-150	1		01/10/17 18:59		
Terphenyl-d14 (S)	85	%.	25-150	1	01/07/17 13:27	01/10/17 18:59	1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	8.3	ug/L	4.0	1		01/06/17 16:07	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 16:07	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 16:07	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 16:07	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 16:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:07		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:07		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:07		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:07		
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:07		
Chloroform	ND	ug/L	0.50	1		01/06/17 16:07		
Chloromethane	ND ND	•	0.50	1		01/06/17 16:07		
		ug/L				01/06/17 16:07		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1 1				
Dibromochloromethane	ND	ug/L	0.50			01/06/17 16:07		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 16:07		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 16:07		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:07		
,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:07		
,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:07		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 16:07	' 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 16:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:07	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:07	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 16:07	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 16:07	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 16:07	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 16:07	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 16:07	75-09-2	
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 16:07		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 16:07		
Styrene	ND	ug/L	1.0	1		01/06/17 16:07		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 16:07		
etrachloroethene	ND ND	ug/L ug/L	0.50	1		01/06/17 16:07		
Foluene	ND ND	ug/L ug/L	0.50	1		01/06/17 16:07		
1,1,1-Trichloroethane		•						
• •	ND	ug/L	0.50	1		01/06/17 16:07		
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:07		
Frichland (Income on the con-	ND	ug/L	0.50	1		01/06/17 16:07		
Frichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 16:07		
/inyl chloride	ND	ug/L	0.50	1		01/06/17 16:07		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 16:07	' 179601-23-1	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-MP8	Lab ID: 2048	8198017	Collected: 01/04/1	17 13:33	Received:	01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
o-Xylene	ND	ug/L	1.0	1		01/06/17 16:07	95-47-6	
Surrogates Dibromofluoromethane (S)	107	%.	72-126	1		01/06/17 16:07	7 1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 16:07		
Toluene-d8 (S)	101	%.	79-119	1		01/06/17 16:07		
Sample: TB-010417-2	Lab ID: 204	8198018	Collected: 01/04/1	17 00:00	Received:	01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	 015/8021				,	-) ''
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/13/17 00:44	1	
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/13/17 00:44	460-00-4	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	180	ug/L	4.0	1		01/06/17 16:25	5 67-64-1	
Benzene	ND	ug/L	0.50	1		01/06/17 16:25	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 16:25	5 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 16:25	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 16:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:25	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:25	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:25	5 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:25	5 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:25	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 16:25	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 16:25	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 16:25	5 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 16:25	5 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 16:25	5 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 16:25	5 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:25	5 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:25	5 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 16:25	5 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:25	5 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 16:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:25	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 16:25	5 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 16:25	5 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 16:25	5 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 16:25		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 16:25	5 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 16:25		



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: TB-010417-2	Lab ID: 204	8198018	Collected: 01/04/1	7 00:00	Received: 01	/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 16:25	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 16:25	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 16:25	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 16:25	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 16:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:25	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 16:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 16:25	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 16:25	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 16:25		
o-Xylene	ND	ug/L	1.0	1		01/06/17 16:25		
Surrogates		· 3· –					·	
Dibromofluoromethane (S)	106	%.	72-126	1		01/06/17 16:25	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 16:25	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 16:25	2037-26-5	
Sample: MW-NDP	Lab ID: 204	8198019	Collected: 01/04/1	7 14:22	Received: 01	/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 00:53	,	
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1		01/12/17 00:53		
Surrogates		9/ =	0.00	•	0.7007 00	0.7.27 00.00		
n-Pentacosane (S)	38	%.	16-137	1	01/06/17 07:40	01/12/17 00:53	629-99-2	
p-Terphenyl (S)	55	%.	10-121	1	01/06/17 07:40	01/12/17 00:53	84-15-1	
B021 GCV BTEX, MTBE, GRO	Analytical Meth		015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/13/17 01:11		
Surrogates		· 3 ^a –	23.0					
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/13/17 01:11	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	3010			
A	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:59	7440-38-2	
Arsenic		mg/L	0.0010	1		01/13/17 22:59		
	KII 1		0.0010			01/13/17 22:59		
Chromium	ND ND	_	0.0040	1				
Chromium Lead	ND	mg/L	0.0010	1				
Chromium Lead √anadium	ND ND	mg/L mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:59		
Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	ND ND Analytical Meth	mg/L mg/L nod: EPA 60	0.0050 020 Preparation Meth	1 nod: EPA	01/09/17 15:32 3005A	01/13/17 22:59	7440-62-2	
Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	ND ND Analytical Meth ND	mg/L mg/L nod: EPA 60 ug/L	0.0050 020 Preparation Meth 1.0	1 nod: EPA 1	01/09/17 15:32 3005A 01/10/17 11:44	01/13/17 22:59	7440-62-2	
Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved	ND ND Analytical Meth ND ND	mg/L mg/L nod: EPA 60 ug/L ug/L	0.0050 020 Preparation Meth 1.0 1.0	1 nod: EPA 1 1	01/09/17 15:32 3005A 01/10/17 11:44 01/10/17 11:44	01/13/17 22:59 01/14/17 00:29 01/14/17 00:29	7440-62-2 7440-38-2 7440-47-3	
Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved Lead, Dissolved Vanadium, Dissolved	ND ND Analytical Meth ND	mg/L mg/L nod: EPA 60 ug/L	0.0050 020 Preparation Meth 1.0	1 nod: EPA 1	01/09/17 15:32 3005A 01/10/17 11:44 01/10/17 11:44 01/10/17 11:44	01/13/17 22:59	7440-62-2 7440-38-2 7440-47-3 7439-92-1	



Project: PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

Sample: MW-NDP	Lab ID: 204	3198019	Collected: 01/04/17	14.22	Received: 01	/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Metho	od: EPA				
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:52	2 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 7	470 Preparation Metho	od: EPA	٦ 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:49	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparatio	n Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	9 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	9 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	9 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27			
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27			
luoranthene	ND ND	ug/L	0.10	1	01/07/17 13:27			
luorene	ND ND	-		1	01/07/17 13:27			
		ug/L	0.10					
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27			
-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27			
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27			
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27			
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	9 129-00-0	
Surrogates	77	0/	05.450	4	04/07/47 40:07	04/40/47 40:40	204.00.0	
2-Fluorobiphenyl (S)	77	%.	25-150	1	01/07/17 13:27			
Ferphenyl-d14 (S)	78	%.	25-150	1	01/07/17 13:27	01/10/17 19:19	9 1/18-51-0	
3260 MSV Low Level	Analytical Meth							
acetone	15.5	ug/L	4.0	1		01/06/17 16:43	3 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 16:43	3 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 16:43	3 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 16:43	3 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 16:43	3 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:43	3 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:43	3 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:43	3 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:43	3 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:43	3 75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 16:43		
Chloromethane	ND	ug/L	0.50	1		01/06/17 16:43		
	ND	ug/L	0.20	1		01/06/17 16:43		
,2-Dibromo-3-chloropropane		_	0.50	1		01/06/17 16:43		
	ND	uu/i						
Dibromochloromethane	ND ND	ug/L ug/L				01/06/17 16:43		
Dibromochloromethane ,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 16:43 01/06/17 16:43	3 106-93-4	
,2-Dibromo-3-chloropropane Dibromochloromethane I,2-Dibromoethane (EDB) Dichlorodifluoromethane I,1-Dichloroethane		•				01/06/17 16:43 01/06/17 16:43 01/06/17 16:43	3 106-93-4 3 75-71-8	



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-NDP	Lab ID: 204	8198019	Collected: 01/04/1	7 14:22	Received:	01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:4	3 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 16:4	3 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:4	3 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 16:4	3 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:4	3 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:4	3 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 16:4	3 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 16:4	3 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 16:4		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 16:4:		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 16:4:		
4-Methyl-2-pentanone (MIBK)	ND ND	ug/L	1.0	1		01/06/17 16:4		
Methyl-tert-butyl ether	2.5	ug/L	0.50	1		01/06/17 16:4		
Styrene	ND	ug/L	1.0	1		01/06/17 16:4		
1,1,2,2-Tetrachloroethane	ND ND	-	0.50	1		01/06/17 16:4		
		ug/L						
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 16:4		
Toluene	ND	ug/L	0.50	1		01/06/17 16:4:		
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:4		
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:4		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 16:4		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 16:4		
/inyl chloride	ND	ug/L	0.50	1		01/06/17 16:4		
n&p-Xylene	ND	ug/L	2.0	1		01/06/17 16:4	3 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 16:4	3 95-47-6	
Surrogates								
Dibromofluoromethane (S)	106	%.	72-126	1		01/06/17 16:4	3 1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 16:4	3 460-00-4	
Toluene-d8 (S)	102	%.	79-119	1		01/06/17 16:4	3 2037-26-5	
Sample: FB-010417	Lab ID: 204	8198020	Collected: 01/04/1	7 14:30	Received:	01/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021			•		
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/13/17 01:3	8	
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/13/17 01:3	8 460-00-4	
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
	17.3	ug/L	4.0	1		01/06/17 17:0	1 67-64-1	C9
Acetone	ND	ug/L	0.50	1		01/06/17 17:0	1 71-43-2	
	ND					01/06/17 17:0		
Benzene	ND ND	ug/L	0.50	1		01/06/17 17.0	1 /5-2/-4	
Benzene Bromodichloromethane		ug/L	0.50 0.50	1 1		01/06/17 17:0		
Benzene Bromodichloromethane Bromoform	ND	ug/L ug/L					1 75-25-2	
Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK)	ND ND	ug/L	0.50	1		01/06/17 17:0	1 75-25-2 1 74-83-9	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: FB-010417	Lab ID: 204	8198020	Collected: 01/04/1	7 14:30	Received: 0	1/04/17 15:08 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 17:01	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 17:01	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 17:01	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 17:01	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 17:01	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 17:01	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 17:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 17:01	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 17:01	75-71-8	
I,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 17:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 17:01	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 17:01	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 17:01		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 17:01	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 17:01	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 17:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 17:01		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 17:01		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 17:01	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 17:01		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 17:01		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 17:01		
Styrene	ND	ug/L	1.0	1		01/06/17 17:01		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 17:01		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 17:01		
Toluene	ND	ug/L	0.50	1		01/06/17 17:01	_	
I,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 17:01		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 17:01		
Frichloroethene	ND	ug/L	0.50	1		01/06/17 17:01		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 17:01		
/inyl chloride	ND	ug/L	0.50	1		01/06/17 17:01		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 17:01		
o-Xylene	ND	ug/L	1.0	1		01/06/17 17:01		
Surrogates	110	49/L	1.0	•		51,00,11 11.01	30 11 0	
Dibromofluoromethane (S)	104	%.	72-126	1		01/06/17 17:01	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 17:01		
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 17:01		



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

QC Batch: 71479 Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008,

2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

2048198017, 2048198018, 2048198019, 2048198020

METHOD BLANK: 298998 Matrix: Water

Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008,

2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

2048198017, 2048198018, 2048198019, 2048198020

Blank Reporting Parameter Result Qualifiers Units I imit Analyzed Gasoline Range Organics ND 01/06/17 17:15 ug/L 4-Bromofluorobenzene (S) %. 86 44-148 01/06/17 17:15

METHOD BLANK: 301228 Matrix: Water

Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008,

2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

2048198017, 2048198018, 2048198019, 2048198020

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers ND 50.0 01/12/17 16:49 Gasoline Range Organics ug/L 4-Bromofluorobenzene (S) 44-148 01/12/17 16:49 %. 87

LABORATORY CONTROL SAMPLE: 298999 Spike LCS LCS % Rec Units Limits Parameter Conc. % Rec Qualifiers Result Gasoline Range Organics 500 440 88 61-136 ug/L 4-Bromofluorobenzene (S) 91 44-148 %.

LABORATORY CONTROL SAMPLE: Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Gasoline Range Organics ug/L 500 436 87 61-136 4-Bromofluorobenzene (S) %. 93 44-148

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299001 299000 MS MSD 2048198006 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc Conc Result Result % Rec % Rec Limits RPD RPD Qual Gasoline Range Organics ND ug/L 500 500 432 430 79 79 15-147 20 4-Bromofluorobenzene (S) 90 91 44-148 %.

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Mercury

Mercury

Date: 01/18/2017 12:36 PM

QC Batch: 71616 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299680 Matrix: Water

ug/L

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter Units Blank Reporting Result Limit Analyzed Qualifiers

ug/L ND 0.20 01/09/17 20:07

LABORATORY CONTROL SAMPLE: 299681

LCS LCS Spike % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1 1.0 105 80-120 Mercury ug/L

1

ND

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299682 299683 MS MSD 2048198006 Spike MS MSD MS MSD Spike % Rec Max Parameter Units Result Conc. Result % Rec % Rec Limits RPD RPD Conc. Result Qual

1

0.63

0.63

63

63

75-125

20 M1

0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

QC Batch: 71675 Analysis Method: EPA 7470

ug/L

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, Associated Lab Samples:

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299988 Matrix: Water

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, Associated Lab Samples:

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers Mercury, Dissolved ND 0.20 01/10/17 16:51

LABORATORY CONTROL SAMPLE: 299989

LCS LCS Spike % Rec

Parameter Units Conc. Result % Rec Limits Qualifiers 1 1.1 108 80-120 Mercury, Dissolved ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299990 299991

MS MSD 2048198006 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Result Result % Rec % Rec Limits RPD RPD Conc. Qual Mercury, Dissolved ug/L ND 1 1 0.73 0.70 70 75-125 20 M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

QC Batch: 71620 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299696 Matrix: Water

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/13/17 19:07	
Chromium	mg/L	ND	0.0010	01/13/17 19:07	
Lead	mg/L	ND	0.0010	01/13/17 19:07	
Vanadium	mg/L	ND	0.0050	01/13/17 19:07	

LABORATORY CONTROL SAMPLE:	299697	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	100	85-115	
Lead	mg/L	.02	0.019	97	84-115	
Vanadium	mg/L	.02	0.020	100	81-115	

MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 29969	8		299699							
			MS	MSD								
		2048198006	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	0.0052	.02	.02	0.024	0.024	94	93	80-120	1	20	
Chromium	mg/L	ND	.02	.02	0.020	0.020	95	93	80-120	1	20	
Lead	mg/L	ND	.02	.02	0.021	0.021	105	104	80-120	1	20	
Vanadium	mg/L	ND	.02	.02	0.018	0.017	88	85	80-120	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

QC Batch: 71681 Analysis Method: EPA 6020

QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 300004 Matrix: Water

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND ND	1.0	01/13/17 19:22	
Chromium, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Lead, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Vanadium, Dissolved	ug/L	ND	5.0	01/13/17 19:22	

LABORATORY CONTROL SAMPLE:	300005	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L		20.3	102	80-120	
Chromium, Dissolved	ug/L	20	19.9	100	80-120	
Lead, Dissolved	ug/L	20	19.3	96	80-120	
Vanadium, Dissolved	ug/L	20	20.2	101	80-120	

MATRIX SPIKE & MATRIX SF	PIKE DUPLIC	CATE: 30000	6		300007							
Parameter	Units	2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	RPD	Max	Qual
Farameter			COIIC.	Conc.			% Kec	% Kec		KPD	KPD	Quai
Arsenic, Dissolved	ug/L	1.6	20	20	20.7	20.5	96	95	75-125	1	20	
Chromium, Dissolved	ug/L	ND	20	20	18.7	18.6	93	93	75-125	0	20	
Lead, Dissolved	ug/L	ND	20	20	20.7	20.8	104	104	75-125	0	20	
Vanadium, Dissolved	ug/L	ND	20	20	17.3	17.3	87	87	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

QC Batch: 71490 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level

Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008,

2048198019, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

2048198017, 2048198018, 2048198019, 2048198020

METHOD BLANK: 299028 Matrix: Water

2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

2048198017, 2048198018, 2048198019, 2048198020

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1-Dichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1-Dichloroethene	ug/L	ND	0.50	01/06/17 09:55	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/06/17 09:55	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/06/17 09:55	
1,2-Dichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,2-Dichloropropane	ug/L	ND	0.50	01/06/17 09:55	
2-Butanone (MEK)	ug/L	ND	2.0	01/06/17 09:55	
2-Hexanone	ug/L	ND	1.0	01/06/17 09:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/06/17 09:55	
Acetone	ug/L	ND	4.0	01/06/17 09:55	
Benzene	ug/L	ND	0.50	01/06/17 09:55	
Bromodichloromethane	ug/L	ND	0.50	01/06/17 09:55	
Bromoform	ug/L	ND	0.50	01/06/17 09:55	
Bromomethane	ug/L	ND	0.50	01/06/17 09:55	
Carbon disulfide	ug/L	ND	1.0	01/06/17 09:55	
Carbon tetrachloride	ug/L	ND	0.50	01/06/17 09:55	
Chlorobenzene	ug/L	ND	0.50	01/06/17 09:55	
Chloroethane	ug/L	ND	0.50	01/06/17 09:55	
Chloroform	ug/L	ND	0.50	01/06/17 09:55	
Chloromethane	ug/L	ND	0.50	01/06/17 09:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/06/17 09:55	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/06/17 09:55	
Dibromochloromethane	ug/L	ND	0.50	01/06/17 09:55	
Dichlorodifluoromethane	ug/L	ND	1.0	01/06/17 09:55	
Ethylbenzene	ug/L	ND	0.50	01/06/17 09:55	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/06/17 09:55	
m&p-Xylene	ug/L	ND	2.0	01/06/17 09:55	
Methyl acetate	ug/L	ND	2.0	01/06/17 09:55	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/06/17 09:55	
Methylene Chloride	ug/L	ND	0.50	01/06/17 09:55	
o-Xylene	ug/L	ND	1.0	01/06/17 09:55	
Styrene	ug/L	ND	1.0	01/06/17 09:55	
Tetrachloroethene	ug/L	ND	0.50	01/06/17 09:55	
Toluene	ug/L	ND	0.50	01/06/17 09:55	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/06/17 09:55	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

METHOD BLANK: 299028 Matrix: Water

Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008,

2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

2048198017, 2048198018, 2048198019, 2048198020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/06/17 09:55	
Trichloroethene	ug/L	ND	0.50	01/06/17 09:55	
Trichlorofluoromethane	ug/L	ND	0.50	01/06/17 09:55	
Vinyl chloride	ug/L	ND	0.50	01/06/17 09:55	
4-Bromofluorobenzene (S)	%.	99	68-124	01/06/17 09:55	
Dibromofluoromethane (S)	%.	102	72-126	01/06/17 09:55	
Toluene-d8 (S)	%.	100	79-119	01/06/17 09:55	

LABORATORY CONTROL SAMPLE:	299029					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.5	107	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	47.7	95	15-179	
1,1,2-Trichloroethane	ug/L	50	45.1	90	58-144	
1,1-Dichloroethane	ug/L	50	54.4	109	63-129	
1,1-Dichloroethene	ug/L	50	53.0	106	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	43.8	88	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.7	93	52-161	
1,2-Dichloroethane	ug/L	50	46.5	93	57-148	
1,2-Dichloropropane	ug/L	50	49.8	100	66-128	
2-Butanone (MEK)	ug/L	50	50.1	100	32-183	
2-Hexanone	ug/L	50	44.5	89	36-170	
1-Methyl-2-pentanone (MIBK)	ug/L	50	45.0	90	26-171	
Acetone	ug/L	50	51.5	103	22-165	
Benzene	ug/L	50	52.1	104	62-131	
Bromodichloromethane	ug/L	50	44.3	89	69-132	
Bromoform	ug/L	50	40.1	80	35-166	
Bromomethane	ug/L	50	44.9	90	34-158	
Carbon disulfide	ug/L	50	65.9	132	31-128 L	.0
Carbon tetrachloride	ug/L	50	48.9	98	54-144	
Chlorobenzene	ug/L	50	48.0	96	70-127	
Chloroethane	ug/L	50	40.5	81	17-195	
Chloroform	ug/L	50	48.4	97	73-134	
Chloromethane	ug/L	50	53.3	107	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.3	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	49.0	98	72-138	
Dibromochloromethane	ug/L	50	43.6	87	49-146	
Dichlorodifluoromethane	ug/L	50	50.0	100	10-179	
Ethylbenzene	ug/L	50	47.2	94	66-126	
sopropylbenzene (Cumene)	ug/L	50	49.1	98	51-138	
m&p-Xylene	ug/L	100	95.7	96	65-129	
Methyl acetate	ug/L	50	50.4	101	20-142	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

ABORATORY CONTROL SAMPLE:	299029					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
ethyl-tert-butyl ether	ug/L	50	48.2	96	37-166	
thylene Chloride	ug/L	50	53.5	107	46-168	
ylene	ug/L	50	47.3	95	65-124	
rene	ug/L	50	47.7	95	72-133	
achloroethene	ug/L	50	48.5	97	46-157	
iene	ug/L	50	49.8	100	69-126	
s-1,2-Dichloroethene	ug/L	50	54.0	108	60-129	
-1,3-Dichloropropene	ug/L	50	46.9	94	59-149	
loroethene	ug/L	50	50.8	102	67-132	
lorofluoromethane	ug/L	50	52.2	104	39-171	
chloride	ug/L	50	42.2	84	27-149	
omofluorobenzene (S)	%.			99	68-124	
mofluoromethane (S)	%.			108	72-126	
ne-d8 (S)	%.			100	79-119	

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	ATE: 29903	0	·	299031							
			MS	MSD								
		2048198006	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	61.6	54.6	123	109	54-137	12	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	53.8	47.9	108	96	15-187	12	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	48.7	44.3	97	89	59-148	10	20	
1,1-Dichloroethane	ug/L	ND	50	50	59.8	53.7	120	107	59-133	11	20	
1,1-Dichloroethene	ug/L	ND	50	50	62.2	53.2	124	106	44-146	15	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	50.0	46.0	100	92	23-166	8	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	51.4	46.4	103	93	55-166	10	20	
1,2-Dichloroethane	ug/L	ND	50	50	50.9	45.9	102	92	56-154	10	20	
1,2-Dichloropropane	ug/L	ND	50	50	56.3	49.8	113	100	62-135	12	20	
2-Butanone (MEK)	ug/L	ND	50	50	54.6	51.2	109	102	20-205	6	20	
2-Hexanone	ug/L	ND	50	50	47.0	45.0	94	90	25-189	4	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	49.5	47.0	99	94	23-184	5	20	
Acetone	ug/L	39.4	50	50	65.5	59.7	52	41	11-217	9	20	
Benzene	ug/L	ND	50	50	60.1	53.0	120	106	52-141	12	20	
Bromodichloromethane	ug/L	ND	50	50	49.9	44.7	100	89	70-134	11	20	
Bromoform	ug/L	ND	50	50	44.1	40.9	88	82	37-171	8	20	
Bromomethane	ug/L	ND	50	50	50.0	46.8	100	94	34-155	7	20	
Carbon disulfide	ug/L	ND	50	50	81.5	68.4	163	136	28-130	18	20	MO
Carbon tetrachloride	ug/L	ND	50	50	56.5	49.9	113	100	48-146	12	20	
Chlorobenzene	ug/L	ND	50	50	55.2	49.6	110	99	67-129	11	20	
Chloroethane	ug/L	ND	50	50	47.0	41.6	94	83	12-192	12	20	
Chloroform	ug/L	ND	50	50	54.2	47.7	108	95	66-143	13	20	
Chloromethane	ug/L	ND	50	50	60.3	54.3	121	109	14-155	11	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	58.8	51.7	118	103	56-141	13	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	53.8	48.4	108	97	70-139	11	20	

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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

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MATRIX SPIKE & MATRIX SPIR	KE DUPLIC	ATE: 299030)		299031							
			MS	MSD								
		2048198006	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Dibromochloromethane	ug/L	ND	50	50	47.7	43.4	95	87	50-150	9	20	
Dichlorodifluoromethane	ug/L	ND	50	50	58.1	51.6	116	103	10-173	12	20	
Ethylbenzene	ug/L	ND	50	50	53.4	48.8	107	98	57-135	9	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	56.5	52.1	113	104	40-146	8	20	
m&p-Xylene	ug/L	ND	100	100	109	98.4	109	98	56-136	10	20	
Methyl acetate	ug/L	ND	50	50	51.9	47.9	104	96	10-142	8	20	
Methyl-tert-butyl ether	ug/L	8.2	50	50	62.0	56.3	108	96	35-176	10	20	
Methylene Chloride	ug/L	ND	50	50	57.9	53.1	116	106	45-166	9	20	
o-Xylene	ug/L	ND	50	50	52.8	47.7	106	95	57-133	10	20	
Styrene	ug/L	ND	50	50	54.1	48.6	108	97	58-144	11	20	
Tetrachloroethene	ug/L	ND	50	50	56.5	51.3	113	103	48-143	10	20	
Toluene	ug/L	ND	50	50	56.8	50.2	114	100	59-136	12	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	62.1	53.8	124	108	57-132	14	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	53.5	48.0	107	96	59-154	11	20	
Trichloroethene	ug/L	ND	50	50	58.3	51.9	117	104	58-140	12	20	
Trichlorofluoromethane	ug/L	ND	50	50	62.3	55.7	125	111	24-175	11	20	
Vinyl chloride	ug/L	ND	50	50	49.5	43.0	99	86	21-150	14	20	
4-Bromofluorobenzene (S)	%.						101	98	68-124			
Dibromofluoromethane (S)	%.						107	106	72-126			
Toluene-d8 (S)	%.						102	101	79-119			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

LABORATORY CONTROL SAMPLE:

Date: 01/18/2017 12:36 PM

QC Batch: 71486 Analysis Method: EPA 8015B Modified QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299020 Matrix: Water

299021

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/11/17 16:31	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/11/17 16:31	
n-Pentacosane (S)	%.	38	16-137	01/11/17 16:31	
o-Terphenyl (S)	%.	56	10-121	01/11/17 16:31	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.21J	54	10-115	
-Pentacosane (S)	%.			47	16-137	
-Terphenyl (S)	%.			66	10-121	

MATRIX SPIKE & MATRIX SPI	KE DUPLIO	CATE: 29902	4 MS	MSD	299025							
		2048198006	Spike	Spike	MS	MSD	MS	MSD	% Rec	M	ax	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD R	PD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.4	.4	0.47	0.57	70	93	10-122	18	20	
n-Pentacosane (S)	%.						64	71	16-137			
o-Terphenyl (S)	%.						73	81	10-121			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

QC Batch: 71484 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010

METHOD BLANK: 299014 Matrix: Water

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/09/17 12:22	
Acenaphthene	ug/L	ND	0.10	01/09/17 12:22	
Acenaphthylene	ug/L	ND	0.10	01/09/17 12:22	
Anthracene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(a)anthracene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(a)pyrene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Chrysene	ug/L	ND	0.10	01/09/17 12:22	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/09/17 12:22	
Fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Fluorene	ug/L	ND	0.10	01/09/17 12:22	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/09/17 12:22	
Naphthalene	ug/L	ND	0.10	01/09/17 12:22	
Phenanthrene	ug/L	ND	0.10	01/09/17 12:22	
Pyrene	ug/L	ND	0.10	01/09/17 12:22	
2-Fluorobiphenyl (S)	%.	70	25-150	01/09/17 12:22	
Terphenyl-d14 (S)	%.	73	25-150	01/09/17 12:22	

LABORATORY CONTROL SAMPLE:	299015					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.7	68	35-150	
Acenaphthene	ug/L	4	2.9	72	35-150	
Acenaphthylene	ug/L	4	2.8	71	35-150	
Anthracene	ug/L	4	3.6	89	35-150	
Benzo(a)anthracene	ug/L	4	3.1	79	35-150	
Benzo(a)pyrene	ug/L	4	2.9	72	35-150	
Benzo(b)fluoranthene	ug/L	4	2.9	74	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.2	81	35-150	
Benzo(k)fluoranthene	ug/L	4	2.9	72	35-150	
Chrysene	ug/L	4	2.9	72	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.6	90	35-150	
Fluoranthene	ug/L	4	2.9	72	35-150	
Fluorene	ug/L	4	2.8	71	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.4	86	35-150	
Naphthalene	ug/L	4	2.5	62	35-150	

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Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

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LABORATORY CONTROL SAMPLE: 299015 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers ug/L Phenanthrene 4 3.1 78 35-150 69 35-150 Pyrene ug/L 4 2.8 2-Fluorobiphenyl (S) %. 73 25-150 Terphenyl-d14 (S) %. 77 25-150

MATRIX SPIKE & MATRIX SP	PIKE DUPLICA	ATE: 299010			299017							
			MS	MSD								
		2048198006	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
2-Methylnaphthalene	ug/L	ND	4	4	3.4	2.7	84	66	35-150	24	20	R1
Acenaphthene	ug/L	0.27	4	4	3.5	2.9	82	65	35-150	21	20	R1
Acenaphthylene	ug/L	ND	4	4	3.4	2.7	84	66	35-150	23	20	R1
Anthracene	ug/L	0.11	4	4	4.0	3.1	97	75	35-150	24	20	R1
Benzo(a)anthracene	ug/L	ND	4	4	3.6	2.8	89	71	35-150	22	20	R1
Benzo(a)pyrene	ug/L	ND	4	4	3.2	2.5	79	62	35-150	24	20	R1
Benzo(b)fluoranthene	ug/L	ND	4	4	3.1	2.5	78	64	35-150	21	20	R1
Benzo(g,h,i)perylene	ug/L	ND	4	4	3.6	3.0	90	74	35-150	20	20	
Benzo(k)fluoranthene	ug/L	ND	4	4	3.1	2.5	79	61	35-150	25	20	R1
Chrysene	ug/L	ND	4	4	3.2	2.5	80	63	35-150	24	20	R1
Dibenz(a,h)anthracene	ug/L	ND	4	4	3.8	3.1	95	79	35-150	18	20	
Fluoranthene	ug/L	ND	4	4	3.2	2.6	80	64	35-150	22	20	R1
Fluorene	ug/L	ND	4	4	3.4	2.7	84	67	35-150	23	20	R1
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	3.7	3.1	92	76	35-150	19	20	
Naphthalene	ug/L	ND	4	4	3.0	2.4	74	58	35-150	24	20	R1
Phenanthrene	ug/L	0.26	4	4	3.6	2.8	83	65	35-150	22	20	R1
Pyrene	ug/L	ND	4	4	3.2	2.4	79	61	35-150	26	20	R1
2-Fluorobiphenyl (S)	%.						83	70	25-150		20	
Terphenyl-d14 (S)	%.						84	68	25-150		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

 QC Batch:
 71561
 Analysis Method:
 EPA 8270 by SIM

 QC Batch Method:
 EPA 3510
 Analysis Description:
 8270 Water by SIM MSSV

 Associated Lab Samples:
 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299504 Matrix: Water

Associated Lab Samples: 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/10/17 15:00	
Acenaphthene	ug/L	ND	0.10	01/10/17 15:00	
Acenaphthylene	ug/L	ND	0.10	01/10/17 15:00	
Anthracene	ug/L	ND	0.10	01/10/17 15:00	
Benzo(a)anthracene	ug/L	ND	0.10	01/10/17 15:00	
Benzo(a)pyrene	ug/L	ND	0.10	01/10/17 15:00	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/10/17 15:00	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/10/17 15:00	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/10/17 15:00	
Chrysene	ug/L	ND	0.10	01/10/17 15:00	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/10/17 15:00	
Fluoranthene	ug/L	ND	0.10	01/10/17 15:00	
Fluorene	ug/L	ND	0.10	01/10/17 15:00	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/10/17 15:00	
Naphthalene	ug/L	ND	0.10	01/10/17 15:00	
Phenanthrene	ug/L	ND	0.10	01/10/17 15:00	
Pyrene	ug/L	ND	0.10	01/10/17 15:00	
2-Fluorobiphenyl (S)	%.	83	25-150	01/10/17 15:00	
Terphenyl-d14 (S)	%.	88	25-150	01/10/17 15:00	

LABORATORY CONTROL SAMPLE:	299505					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L		3.2	79	35-150	
Acenaphthene	ug/L	4	3.3	82	35-150	
Acenaphthylene	ug/L	4	3.2	80	35-150	
Anthracene	ug/L	4	4.0	100	35-150	
Benzo(a)anthracene	ug/L	4	3.7	92	35-150	
Benzo(a)pyrene	ug/L	4	3.4	85	35-150	
Benzo(b)fluoranthene	ug/L	4	3.4	84	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.0	101	35-150	
Benzo(k)fluoranthene	ug/L	4	3.4	84	35-150	
Chrysene	ug/L	4	3.5	87	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.4	110	35-150	
Fluoranthene	ug/L	4	3.3	83	35-150	
Fluorene	ug/L	4	3.3	83	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.2	106	35-150	
Naphthalene	ug/L	4	2.9	72	35-150	
Phenanthrene	ug/L	4	3.5	88	35-150	
Pyrene	ug/L	4	3.2	79	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

LABORATORY CONTROL SAMPLE: 299505 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 2-Fluorobiphenyl (S) %. 25-150 106 Terphenyl-d14 (S) %. 111 25-150

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71719

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

Date: 01/18/2017 12:36 PM

C9	Common Laboratory Contaminant.
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
MO	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
048198002	EB-010317	EPA 3535	71486	EPA 8015B Modified	71841
048198003	MW-B9	EPA 3535	71486	EPA 8015B Modified	71841
048198004	MW-EB103	EPA 3535	71486	EPA 8015B Modified	71841
048198005	MW-EB104	EPA 3535	71486	EPA 8015B Modified	71841
048198006	MW-EB105	EPA 3535	71486	EPA 8015B Modified	71841
048198007	DUP004	EPA 3535	71486	EPA 8015B Modified	71841
048198008	MW-EB106	EPA 3535	71486	EPA 8015B Modified	71841
048198009	MW-EB107	EPA 3535	71486	EPA 8015B Modified	71841
048198010	MW-EB108	EPA 3535	71486	EPA 8015B Modified	71841
048198013	EB-010417	EPA 3535	71486	EPA 8015B Modified	71841
048198014	MW-DP1	EPA 3535	71486	EPA 8015B Modified	71841
048198015	MW-MP2	EPA 3535	71486	EPA 8015B Modified	71841
)48198016	MW-MP3	EPA 3535	71486	EPA 8015B Modified	71841
)48198017	MW-MP8	EPA 3535	71486	EPA 8015B Modified	71841
048198019	MW-NDP	EPA 3535	71486	EPA 8015B Modified	71841
048198001	TB-010317	EPA 8015/8021	71479		
048198002	EB-010317	EPA 8015/8021	71479		
048198003	MW-B9	EPA 8015/8021	71479		
148198004	MW-EB103	EPA 8015/8021	71479		
48198005	MW-EB104	EPA 8015/8021	71479		
148198006	MW-EB105	EPA 8015/8021	71479		
48198007	DUP004	EPA 8015/8021	71479		
48198008	MW-EB106	EPA 8015/8021	71479		
)4819800 9	MW-EB107	EPA 8015/8021	71479		
)48198010	MW-EB108	EPA 8015/8021	71479		
048198011	FB-010317	EPA 8015/8021	71479		
48198012	TB-010417	EPA 8015/8021	71479		
048198013	EB-010417	EPA 8015/8021	71479		
048198014	MW-DP1	EPA 8015/8021	71479		
048198015	MW-MP2	EPA 8015/8021	71479		
)48198016	MW-MP3	EPA 8015/8021	71479		
)48198017	MW-MP8	EPA 8015/8021	71479		
048198018	TB-010417-2	EPA 8015/8021	71479		
)48198019	MW-NDP	EPA 8015/8021	71479		
)48198020	FB-010417	EPA 8015/8021	71479		
48198002	EB-010317	EPA 3010	71620	EPA 6020	71657
048198003	MW-B9	EPA 3010	71620	EPA 6020	71657
148198004	MW-EB103	EPA 3010	71620	EPA 6020	71657
048198005	MW-EB104	EPA 3010	71620	EPA 6020	71657
48198006	MW-EB105	EPA 3010	71620	EPA 6020	71657
48198007	DUP004	EPA 3010	71620	EPA 6020	71657
48198008	MW-EB106	EPA 3010	71620	EPA 6020	71657
48198009	MW-EB107	EPA 3010	71620	EPA 6020	71657
48198010	MW-EB108	EPA 3010	71620	EPA 6020	71657
148198013	EB-010417	EPA 3010	71620	EPA 6020	71657
)48198014	MW-DP1	EPA 3010	71620	EPA 6020	71657
)48198015	MW-MP2	EPA 3010	71620	EPA 6020	71657
	17177 1711 &	L: /\ 00 IO	1 1020	/ 1 0020	1 1001



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

_ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
048198017	MW-MP8	EPA 3010	71620	EPA 6020	71657
048198019	MW-NDP	EPA 3010	71620	EPA 6020	71657
048198002	EB-010317	EPA 3005A	71681	EPA 6020	71750
048198003	MW-B9	EPA 3005A	71681	EPA 6020	71750
048198003	MW-EB103	EPA 3005A	71681	EPA 6020	71750
048198004 048198005	MW-EB104	EPA 3005A	71681	EPA 6020	71750
048198005 048198006	MW-EB105	EPA 3005A EPA 3005A	71681	EPA 6020	71750
048198007	DUP004	EPA 3005A	71681	EPA 6020	71750
	MW-EB106				71750
048198008		EPA 3005A	71681	EPA 6020	
048198009	MW-EB107	EPA 3005A	71681	EPA 6020	71750
048198010	MW-EB108	EPA 3005A	71681	EPA 6020	71750
048198013	EB-010417	EPA 3005A	71681	EPA 6020	71750
048198014	MW-DP1	EPA 3005A	71681	EPA 6020	71750
048198015	MW-MP2	EPA 3005A	71681	EPA 6020	71750
048198016	MW-MP3	EPA 3005A	71681	EPA 6020	71750
048198017	MW-MP8	EPA 3005A	71681	EPA 6020	71750
048198019	MW-NDP	EPA 3005A	71681	EPA 6020	71750
048198002	EB-010317	EPA 7470	71616	EPA 7470	71655
048198003	MW-B9	EPA 7470	71616	EPA 7470	71655
048198004	MW-EB103	EPA 7470	71616	EPA 7470	71655
048198005	MW-EB104	EPA 7470	71616	EPA 7470	71655
048198006	MW-EB105	EPA 7470	71616	EPA 7470	71655
148198007	DUP004	EPA 7470	71616	EPA 7470	71655
048198008	MW-EB106	EPA 7470	71616	EPA 7470	71655
048198009	MW-EB107	EPA 7470	71616	EPA 7470	71655
048198010	MW-EB108	EPA 7470	71616	EPA 7470	71655
048198013	EB-010417	EPA 7470	71616	EPA 7470	71655
048198014	MW-DP1	EPA 7470	71616	EPA 7470	71655
048198015	MW-MP2	EPA 7470	71616	EPA 7470	71655
048198016	MW-MP3	EPA 7470	71616	EPA 7470	71655
048198017	MW-MP8	EPA 7470	71616	EPA 7470	71655
048198017 048198019	MW-NDP	EPA 7470	71616	EPA 7470	71655
	EB-010317				
048198002		EPA 7470	71675	EPA 7470	71752
048198003	MW-B9	EPA 7470	71675	EPA 7470	71752
048198004	MW-EB103	EPA 7470	71675	EPA 7470	71752
048198005	MW-EB104	EPA 7470	71675	EPA 7470	71752
048198006	MW-EB105	EPA 7470	71675	EPA 7470	71752
048198007	DUP004	EPA 7470	71675	EPA 7470	71752
148198008	MW-EB106	EPA 7470	71675	EPA 7470	71752
48198009	MW-EB107	EPA 7470	71675	EPA 7470	71752
048198010	MW-EB108	EPA 7470	71675	EPA 7470	71752
048198013	EB-010417	EPA 7470	71675	EPA 7470	71752
048198014	MW-DP1	EPA 7470	71675	EPA 7470	71752
048198015	MW-MP2	EPA 7470	71675	EPA 7470	71752
048198016	MW-MP3	EPA 7470	71675	EPA 7470	71752
048198017	MW-MP8	EPA 7470	71675	EPA 7470	71752
048198019	MW-NDP	EPA 7470	71675	EPA 7470	71752



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048198002	EB-010317	EPA 3510	 71484	EPA 8270 by SIM	71596
2048198003	MW-B9	EPA 3510	71484	EPA 8270 by SIM	71596
2048198004	MW-EB103	EPA 3510	71484	EPA 8270 by SIM	71596
2048198005	MW-EB104	EPA 3510	71484	EPA 8270 by SIM	71596
2048198006	MW-EB105	EPA 3510	71484	EPA 8270 by SIM	71596
2048198007	DUP004	EPA 3510	71484	EPA 8270 by SIM	71596
2048198008	MW-EB106	EPA 3510	71484	EPA 8270 by SIM	71596
2048198009	MW-EB107	EPA 3510	71484	EPA 8270 by SIM	71596
2048198010	MW-EB108	EPA 3510	71484	EPA 8270 by SIM	71596
2048198013	EB-010417	EPA 3510	71561	EPA 8270 by SIM	71719
2048198014	MW-DP1	EPA 3510	71561	EPA 8270 by SIM	71719
2048198015	MW-MP2	EPA 3510	71561	EPA 8270 by SIM	71719
2048198016	MW-MP3	EPA 3510	71561	EPA 8270 by SIM	71719
2048198017	MW-MP8	EPA 3510	71561	EPA 8270 by SIM	71719
2048198019	MW-NDP	EPA 3510	71561	EPA 8270 by SIM	71719
2048198001	TB-010317	EPA 5030B/8260	71490		
2048198002	EB-010317	EPA 5030B/8260	71490		
2048198003	MW-B9	EPA 5030B/8260	71490		
2048198004	MW-EB103	EPA 5030B/8260	71490		
2048198005	MW-EB104	EPA 5030B/8260	71490		
2048198006	MW-EB105	EPA 5030B/8260	71490		
2048198007	DUP004	EPA 5030B/8260	71490		
2048198008	MW-EB106	EPA 5030B/8260	71490		
2048198009	MW-EB107	EPA 5030B/8260	71490		
2048198010	MW-EB108	EPA 5030B/8260	71490		
2048198011	FB-010317	EPA 5030B/8260	71490		
2048198012	TB-010417	EPA 5030B/8260	71490		
2048198013	EB-010417	EPA 5030B/8260	71490		
2048198014	MW-DP1	EPA 5030B/8260	71490		
2048198015	MW-MP2	EPA 5030B/8260	71490		
2048198016	MW-MP3	EPA 5030B/8260	71490		
2048198017	MW-MP8	EPA 5030B/8260	71490		
2048198018	TB-010417-2	EPA 5030B/8260	71490		
2048198019	MW-NDP	EPA 5030B/8260	71490		
2048198020	FB-010417	EPA 5030B/8260	71490		



CHAIN-OF-CUSTODY / AP WO#: 2048198

/	www.pacelabs.com																, man d				_				
	tion A	Section E								Section C											_	ì	of 2_		
	uired Client Information:	Required Report To:				2 11				nvoice Inform Attention:	nation:	2048	198									20	7513	39	
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nor	1-111-4000 181-111-80%	Project Na	me:	لسن	m for	<u> </u>	· bps		١	Manager: Pace Profile #;	<u> </u>	30	Red	20g⊃	·		_ Sit	e Locatio		P.6	•				digital l
Requ	uested Due Date/TAT:	Project Nu	ımber:	<u>509</u>	2.160	<u>56</u>			Ì	ace Profile #;								STATE						-11-24-1 -1-44-1	
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	Section D Matrix C Required Client Information MATRIX /		£	<u>@</u>		COLL	ECTED	İ	ŀ		Presei	vatives		ŤN/A		.									
	Required Client Information <u>MATRIX /</u> Drinking Wat	er DW	es to	C=COMP)		OOLL	I		z l		1 1			97.0	<u> </u>	11	11		\dagger						
	Water Waste Water		(see valid codes to left)	ျို	COMPO		COMPC END/G	SITE	COLLECTION							,	1 5	.4			2	İ			1
	Product Soil/Solid	P SL	ee val	(G=GRAB	SIAN				OF F	"					£	4015	ार्य	3			اِ ا		-		
	SAMPLE ID Oil Wipe	OŁ WP		9					AT C	CONTAINERS sserved				est	2 2 X	16	्राप्	なと			ije Žije				
	(A-Z, 0-9 / ,-) Air Sample IDs MUST BE UNIQUE Tissue	AR TS	30S	TYPE					EMP	Ved				2	2 3	ا 🗞 ا		4			 				
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ITEM			MATRIX	SAMPLE -					SAMPL	# OF CONTAIN Unpreserved H-SO ₄		NaOH Na ₂ S ₂ O ₃	Methanol Other	Analysis Test	K 3C/s	020	3 voc3 metals	(محرار 35-10	Ì	1 1	Residual Chlorine (Y/N)	D.,	a Duaisat	. Ala /	LabiD
			+	+	DATE	TIME	DATE	+	0)	4 71	1 4		20	10.00	$\frac{1}{x}$				+	++	 	Fac	e Project	NO.	Lab I.D.
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8	MW- BBIOS (MSD)		W.				1/50/10		┪	105			\vdash	1	$\mathbf{x} \mathbf{\hat{x}}$	والإلآ	1 ×	x	\top	 			-		
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Page 76 of 78	0	RIGINA	AL.		-4···	SAMPLE	R NAME	AND SIGNAT	URI												ပ်	l p 2	Custody Sealed Cooler (Y/N)		Samples Intact (Y/N)
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78							SIGNATU	RE of SAMPL	ER:	(h	M				DATI (MM	E Signe /DD/YY)	d : 0%	1/04/	/1)		ļ ^e	& z	Sea		Sam



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Continu A	Section B							Sectio	ın C												F	age:		2	of 7_	
Section A Required Client Information:	Required Pro	ect Info	ormation:					Invoice	Inforn	nation:											ľ					40
Company: Areads	Report To:	E	Frain	رحاجه	<u> - در</u>			Attentio	n:															2 U	751	4U
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Phone: 177-4000 Fax: 181-171-4046	Project Name	Ή.	اسلما	MW	امسوک	اسم		Pace Pr Manage	oject	7	ء ما	~ (<u> </u>)o~\	<u>مرو</u>			Site	Locati	on	^	_				
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3,3300	l	-		<u> </u>											Re	ques	ted /	Analy	sis Fi	terec	(Y/N)				
Section D Required Client Information Required Client Information MATRIX Drinking War Water Waste Waste Product Soil/Solid Oil Wipe Air Sample IDs MUST BE UNIQUE Sample IDs MUST BE UNIQUE Tissue Other	CODE der DW WT F WW P SL OL WP AR TS	MATRIA CODE (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP)	STAF	DSITE RT	COMPOS END/GF	RAB	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Inpreserved	Pres °ONH	rervat.		Aethanol Other	↓Analysis Test ↓ ∀/N↓	ام	DRO/020 4015	Chen.	₹ \$2,	Dissilved Metains				Residual Chlorine (Y/N)			
			- 37	TIME	DATE	TIME	S		7 1		<u> </u>	-	2 0	200	-	+	.√C	7		+	+	+		Pace	Project N	lo./ Lab I.D.
FB-010317		17 C			0:10:340 0:10:4/10			4	+	-	4		+		X >	-	\square	\dashv	+	+	+	+	+			
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Page O			61	SAMPL F	R NAME A	ND SIGNA	TUR	L E		<u></u> Vitak	A No. 1			200	43 E.	· .		, en 1900	M.			十	0	_ t	<u></u>	act
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77 of 78						RE of SAMF			M		, 1\J				DAT	E Sig I/DD/\	ned (Y):	(C)	/o4	11			Tem	Rece	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

WO#: 2048198

Sample Condition PM: JAR1

Due Date: 01/18/17

Pace Analytical"	Oampic Ooi	iditioi	CLIENT: 98-A	RCADISPR	
	d. Blvd., Suite F 70087		•	<u> </u>	
Courier: Pace Courier Hired (Courier Fed X		PS 🗆 DHL	□ USPS □ Custome	er 🗆 Other
Custody Seal on Cooler/Box Present:	[see COC]			Custody Seals intact	Yes □No
Therometer Used: Therm Fisher IR 5 Therm Fisher IR 6 Therm Fisher IR 7	Type of Ic	e: v	Wet Blue None	Samples on ice: [s	see COC]
Cooler Temperature: [see COC]	Temp should be	above f	reezing to 6°C	Date and Initials of person contents:	examining 1
Temp must be measured from Temperature blan	nk when present		Comments:		
Femperature Blank Present"?	Yes □No	⊃ □N/A	1		
Chain of Custody Present:	Yes □No	DN/A	2		
Chain of Custody Complete:	✓Yes □No	D □N/A	3		
Chain of Custody Relinquished:	Yes □No	D □N/A	4		
Sampler Name & Signature on COC:	√Yes □No	D □N/A	5		
Samples Arrived within Hold Time:	√Yes □No	D □N/A	6		<u> </u>
Sufficient Volume:	√lYes □No	□N/A	7 .		<u> </u>
Correct Containers Used:	es □No	DN/A	8		
Filtered vol. Rec. for Diss. tests	□Yes □No	M/A	9		
Sample Labels match COC:	es □Nc	DN/A	10		
All containers received within manafacture or cautionary and/or expiration dates.					
All containers needing chemical preservation been checked (except VOA, coliform, & O8		o □n/a	12	·	
All containers preservation checked found compliance with EPA recommendation.	to be in ✓Yes □No	o □N/A		preserative added? □Yes	□No H2SO4
Headspace in VOA Vials (>6mm):	□Yes ☑No	□ N/A	14		
Frip Blank Present:	Yes 🗆 No)	15		_
Client Notification/ Resolution:					
Person Contacted:				Date/Time:	·
Comments/ Resolution:					
					
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January 18, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 05, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

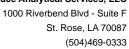
Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048222001	TB-010517	Water	01/05/17 00:00	01/05/17 12:50
2048222002	EB-010517	Water	01/05/17 08:46	01/05/17 12:50
2048222003	MW-48A	Water	01/05/17 09:42	01/05/17 12:50
2048222004	MW-109A	Water	01/05/17 11:05	01/05/17 12:50
2048222005	DUP005	Water	01/05/17 00:00	01/05/17 12:50
2048222006	MW-M14	Water	01/05/17 11:34	01/05/17 12:50
2048222007	FB-010517	Water	01/05/17 11:38	01/05/17 12:50



SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048222001	TB-010517	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222002	EB-010517	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048222003	MW-48A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048222004	MW-109A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048222005	DUP005	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048222006	MW-M14	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Lab ID	Sample ID	Analyte Method Analysts Reported	
		EPA 6020 KJR	4 PASI-N
		EPA 7470 MHB1	1 PASI-N
		EPA 7470 MHB1	1 PASI-N
		EPA 8270 by SIM GEJ 1	PASI-N
		EPA 5030B/8260 RMP 4	5 PASI-N
2048222007	FB-010517	EPA 8015/8021 MHM	2 PASI-N
		EPA 5030B/8260 RMP 4	5 PASI-N



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71577

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

7 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 6020

Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71617

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047753015

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299686)
 - Arsenic
- MSD (Lab ID: 299687)
 - Arsenic

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71683

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 300011)
 - Vanadium, Dissolved

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Batch Comments:

Insufficient sample volume to perform MS/MSD analysiws.

• QC Batch: 71749



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 7470
Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71665

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

7 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71630

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 299870)
 - Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71630

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048288001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 299871)
 - Carbon disulfide
- MSD (Lab ID: 299872)
 - Carbon disulfide

R1: RPD value was outside control limits.

- MSD (Lab ID: 299872)
 - Carbon disulfide



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method:EPA 5030B/8260Description:8260 MSV Low LevelClient:BBL Caribe / Arcadis PRDate:January 18, 2017

Additional Comments:

Analyte Comments:

QC Batch: 71630

C9: Common Laboratory Contaminant.

- DUP005 (Lab ID: 2048222005)
 - Acetone
- EB-010517 (Lab ID: 2048222002)
 - Acetone
- FB-010517 (Lab ID: 2048222007)
 - Acetone
- MW-109A (Lab ID: 2048222004)
 - Acetone
- MW-48A (Lab ID: 2048222003)
 - Acetone
- MW-M14 (Lab ID: 2048222006)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.



Project: PUMA TERMINAL MW SAMPLING

Date: 01/18/2017 12:38 PM

Sample: TB-010517	Lab ID: 204	8222001	Collected: 01/05/1	7 00:00	Received:	01/05/17 12:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 15:3	0	
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/12/17 15:3	0 460-00-4	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	182	ug/L	4.0	1		01/10/17 12:1	6 67-64-1	
Benzene	ND	ug/L	0.50	1		01/10/17 12:1	6 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 12:1	6 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 12:1	6 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:1	6 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:1	6 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:1	6 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:1	6 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:1	6 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 12:1		
Chloroform	ND	ug/L	0.50	1		01/10/17 12:1		
Chloromethane	ND	ug/L	0.50	1		01/10/17 12:1		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:1		
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:1		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 12:1		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 12:1		
,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:1		
,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:1		
,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:1		
sis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 12:1		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:1		
1,2-Dichloropropane	ND ND	ug/L ug/L	0.50	1		01/10/17 12:1		
	ND ND	•	0.50	1			6 10061-01-5	
cis-1,3-Dichloropropene		ug/L						
rans-1,3-Dichloropropene	ND	ug/L	0.50	1 1			6 10061-02-6	
Ethylbenzene	ND	ug/L	0.50			01/10/17 12:1		
2-Hexanone	ND	ug/L	1.0	1		01/10/17 12:1		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 12:1		
Methyl acetate	ND	ug/L	2.0	1		01/10/17 12:1		
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 12:1		
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 12:1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 12:1		
Styrene	ND	ug/L	1.0	1		01/10/17 12:1		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 12:1		
etrachloroethene	ND	ug/L	0.50	1		01/10/17 12:1		
oluene	ND	ug/L	0.50	1		01/10/17 12:1		
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:1		
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:1		
richloroethene	ND	ug/L	0.50	1		01/10/17 12:1		
richlorofluoromethane	ND	ug/L	0.50	1		01/10/17 12:1		
/inyl chloride	ND	ug/L	0.50	1		01/10/17 12:1	6 75-01-4	
n&p-Xylene	ND	ug/L	2.0	1		01/10/17 12:1	6 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 12:1	6 95-47-6	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Date: 01/18/2017 12:38 PM

Pace Project No.: 2048222								
Sample: TB-010517	Lab ID: 204	8222001	Collected: 01/05/1	17 00:00	Received: 0	1/05/17 12:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3260 MSV Low Level	Analytical Met	nod: EPA 50	030B/8260					
Surrogates	440	0/	70.400	4		04/40/47 40 4	0 4000 50 7	
Dibromofluoromethane (S) 4-Bromofluorobenzene (S)	113 99	%. %.	72-126 68-124	1 1		01/10/17 12:1 01/10/17 12:1		
Toluene-d8 (S)	99	%. %.	79-119	1		01/10/17 12:1		
oluerie-do (3)	99	/0.	79-119	'		01/10/17 12.1	0 2037-20-3	
Sample: EB-010517	Lab ID: 204	8222002	Collected: 01/05/1	17 08:46	Received: 0	1/05/17 12:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:0	3	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/09/17 19:0		
Surrogates								
n-Pentacosane (S)	60	%.	16-137	1		01/09/17 19:0		
o-Terphenyl (S)	64	%.	10-121	1	01/09/17 07:20	01/09/17 19:0	3 84-15-1	
3021 GCV BTEX, MTBE, GRO	Analytical Met	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 15:5	7	
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/12/17 15:5	7 460-00-4	
6020 MET ICPMS	Analytical Met	nod: EPA 60	020 Preparation Met	hod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:5	7 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:5	7 7440-47-3	
_ead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:5	7 7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 20:5	7 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	nod: EPA 60	020 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:0	3 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:0	3 7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:0	3 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:0	3 7440-62-2	L3
470 Mercury	Analytical Met	nod: EPA 74	470 Preparation Met	hod: EPA	A 7470			
<i>Mercury</i>	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:5	1 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Met	nod: EPA 74	470 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:0	1 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Met	nod: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:5	8 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:5	8 208-96-8	
Anthracene	ND	ug/L	0.10	1		01/10/17 20:5		
Benzo(a)anthracene	ND	ug/L	0.10	1		01/10/17 20:5		
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:5	8 50-32-8	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: EB-010517	Lab ID: 204	8222002	Collected: 01/05/1	7 08:46	Received: 01	I/05/17 12:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	85-01-8	
Pyrene	ND	ug/L	0.10	1		01/10/17 20:58		
Surrogates		3					-	
2-Fluorobiphenyl (S)	86	%.	25-150	1	01/10/17 09:46	01/10/17 20:58	321-60-8	
Terphenyl-d14 (S)	79	%.	25-150	1	01/10/17 09:46	01/10/17 20:58	1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Acetone	14.6	ug/L	4.0	1		01/10/17 12:34	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 12:34		
Bromodichloromethane	0.61	ug/L	0.50	1		01/10/17 12:34	_	
Bromoform	ND	ug/L	0.50	1		01/10/17 12:34		
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:34		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:34		
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:34		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:34		LO
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:34		
Chloroethane	ND	ug/L	0.50	1		01/10/17 12:34		
Chloroform	3.1	ug/L	0.50	1		01/10/17 12:34		
Chloromethane	ND	ug/L	0.50	1		01/10/17 12:34		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:34		
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:34		
,2-Dibromoethane (EDB)	ND ND	ug/L	1.0	1		01/10/17 12:34		
Dichlorodifluoromethane	ND ND	ug/L	1.0	1		01/10/17 12:34		
,1-Dichloroethane	ND ND	ug/L	0.50	1		01/10/17 12:34		
,2-Dichloroethane	ND ND	ug/L ug/L	0.50	1		01/10/17 12:34		
,1-Dichloroethene	ND ND	ug/L	0.50	1		01/10/17 12:34		
is-1,2-Dichloroethene	ND ND	-	1.0	1		01/10/17 12:34		
,		ug/L		1				
rans-1,2-Dichloroethene	ND	ug/L	0.50			01/10/17 12:34		
,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 12:34		
ris-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:34		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:34		
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 12:34		
2-Hexanone	ND	ug/L	1.0	1		01/10/17 12:34		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 12:34		
Methyl acetate	ND	ug/L	2.0	1		01/10/17 12:34		
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 12:34		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 12:34	108-10-1	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: EB-010517	Lab ID: 204	48222002	Collected: 01/05/1	7 08:46	Received: 01	/05/17 12:50 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Me	thod: EPA 5	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 12:34	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 12:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 12:34	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 12:34	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 12:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:34		
Trichloroethene	ND	ug/L	0.50	1		01/10/17 12:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 12:34		
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 12:34		
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 12:34		
o-Xylene	ND	ug/L	1.0	1		01/10/17 12:34		
Surrogates	ND	ug/L	1.0	'		01/10/17 12.34	93-47-0	
Dibromofluoromethane (S)	110	%.	72-126	1		01/10/17 12:34	1868-53-7	
4-Bromofluorobenzene (S)	95	%.	68-124	1		01/10/17 12:34		
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 12:34		
Toluctic do (o)	101	70.	75-115	•		01/10/17 12.04	2007-20-0	
Sample: MW-48A	Lab ID: 204	48222003	Collected: 01/05/1	7 09:42	Received: 01	/05/17 12:50 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Me	thod: EPA 8	015B Modified Prepa	ration M	ethod: EPA 3535	5	-	
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:31		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/09/17 19:31		
Surrogates	ND	mg/L	1.0	'	01/03/11 01.20	01/03/17 13.51		
n-Pentacosane (S)	73	%.	16-137	1	01/09/17 07:20	01/09/17 19:31	629-99-2	
o-Terphenyl (S)	69	%.	10-121	1		01/09/17 19:31		
o respiration (e)	00	70.	10 121	•	01/00/17 07:20	01/00/17 10:01	04 10 1	
8021 GCV BTEX, MTBE, GRO	Analytical Me	thod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 12:01		
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/12/17 12:01	460-00-4	
6020 MET ICPMS	Analytical Me	thod: EPA 6	020 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:01	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:01	7440-47-3	
Lead	0.0031	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:01	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:01	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Me	thod: EPA 6	020 Preparation Meth	nod: EPA	3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:06	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/13/17 23:06		
Lead, Dissolved	ND ND	_	1.0	1		01/13/17 23:06		
•		ug/L						1.2
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:06	1440-02-2	L3



Project: PUMA TERMINAL MW SAMPLING

Date: 01/18/2017 12:38 PM

Sample: MW-48A	Lab ID: 204	8222003	Collected: 01/05/1	7 //0-12	Received: 01	/05/17 12:50	Matrix: Water	
Parameters	Results	Units	Report Limit	7 09.42 DF	Prepared	Analyzed	CAS No.	Qua
					· · ·	Analyzed	<u> </u>	_
470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	od: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:14	4 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	od: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:03	3 7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparation	on Meth	od: EPA 3510			
cenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	83-32-9	
cenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	3 208-96-8	
Inthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	3 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	3 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	3 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46			
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46			
luoranthene		-						
	ND	ug/L	0.10	1	01/10/17 09:46			
luorene	ND	ug/L	0.10	1	01/10/17 09:46			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46			
-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46			
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	3 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	8 85-01-8	
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	3 129-00-0	
Surrogates								
r-Fluorobiphenyl (S)	80	%.	25-150	1	01/10/17 09:46	01/10/17 21:18	3 321-60-8	
erphenyl-d14 (S)	78	%.	25-150	1	01/10/17 09:46	01/10/17 21:18	3 1718-51-0	
2260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
cetone	33.0	ug/L	4.0	1		01/10/17 12:52	2 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 12:52	2 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 12:52	2 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 12:52	2 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:52	2 74-83-9	
P-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:52	2 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:52	2 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:52		
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:52		
Chloroethane	ND	ug/L	0.50	1		01/10/17 12:52		
Chloroform	ND	ug/L	0.50	1		01/10/17 12:52		
Chloromethane	ND	ug/L ug/L	0.50	1		01/10/17 12:52		
		_						
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:52		
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:52		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 12:52		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 12:52		
,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:52		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:52	2 107-06-2	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: MW-48A	Lab ID: 204	8222003	Collected: 01/05/1	17 09:42	Received: 01	1/05/17 12:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 12:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 12:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:52	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 12:52	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 12:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 12:52	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 12:52	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 12:52		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 12:52		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 12:52		
Styrene	ND	ug/L	1.0	1		01/10/17 12:52		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 12:52		
Tetrachloroethene	ND ND	ug/L ug/L	0.50	1		01/10/17 12:52		
Toluene	ND ND	ug/L ug/L	0.50	1		01/10/17 12:52	_	
1,1,1-Trichloroethane	ND ND	•	0.50	1		01/10/17 12:52		
, ,		ug/L				01/10/17 12:52		
1,1,2-Trichloroethane	ND	ug/L	0.50	1				
Trichloroethene	ND	ug/L	0.50	1		01/10/17 12:52		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 12:52		
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 12:52		
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 12:52		
o-Xylene	ND	ug/L	1.0	1		01/10/17 12:52	95-47-6	
Surrogates	445	0.4	70.400			04/40/47 40 50	4000 50 7	
Dibromofluoromethane (S)	115	%.	72-126	1		01/10/17 12:52		
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/10/17 12:52		
Toluene-d8 (S)	102	%.	79-119	1		01/10/17 12:52	2 2037-26-5	
Sample: MW-109A	Lab ID: 204	8222004	Collected: 01/05/1	17 11:05	Received: 01	1/05/17 12:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	O15B Modified Prepa	ration M	lethod: EPA 3535	 5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:59)	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/09/17 19:59		
Surrogates								
n-Pentacosane (S)	59	%.	16-137	1	01/09/17 07:20	01/09/17 19:59	629-99-2	
o-Terphenyl (S)	63	%.	10-121	1	01/09/17 07:20	01/09/17 19:59	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 12:27	•	
Surrogates	24	0.4	44.44			04/40/47 40 57		
4-Bromofluorobenzene (S)	91	%.	44-148	1		01/12/17 12:27	460-00-4	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: MW-109A	Lab ID: 204	8222004	Collected: 01/05/1	17 11:05	Received: 01	/05/17 12:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Met	hod: EPA 60	020 Preparation Met	hod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:05	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:05	7440-47-3	
_ead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:05	7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:05	7440-62-2	
020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	020 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:10	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:10	7440-47-3	
.ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:10	7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:10	7440-62-2	L3
470 Mercury	Analytical Met	hod: EPA 74	470 Preparation Met	hod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:53	7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:09	7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	83-32-9	
cenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 208-96-8	
nthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 120-12-7	
enzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 56-55-3	
enzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 50-32-8	
enzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 191-24-2	
Senzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 53-70-3	
luoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 206-44-0	
luorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 193-39-5	
-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	91-57-6	
laphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	3 129-00-0	
Surrogates -Fluorobiphenyl (S)	97	%.	25-150	1	01/10/17 09:46	01/10/17 21:38	321-60-8	
Ferphenyl-d14 (S)	85	%. %.	25-150	1	01/10/17 09:46			
3260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Acetone	6.3	ug/L	4.0	1		01/10/17 13:10	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 13:10	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 13:10	-	
Bromoform	ND	ug/L	0.50	1		01/10/17 13:10		
Bromomethane	ND	ug/L	0.50	1		01/10/17 13:10		
2-Butanone (MEK)	ND ND	ug/L ug/L	2.0	1		01/10/17 13:10		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: MW-109A	Lab ID: 204	8222004	Collected: 01/05/1	7 11:05	Received:	01/05/17 12:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 13:10	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 13:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 13:10	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 13:10	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 13:10	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 13:10	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 13:10	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 13:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 13:10	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 13:10	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 13:10	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 13:10		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:10		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:10		
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 13:10		
2-Hexanone	ND	ug/L	1.0	1		01/10/17 13:10		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 13:10		
Methyl acetate	ND	ug/L	2.0	1		01/10/17 13:10		
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 13:10		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 13:10		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 13:10		
Styrene	ND	ug/L	1.0	1		01/10/17 13:10		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 13:10		
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 13:10		
Toluene	ND	ug/L	0.50	1		01/10/17 13:10		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:10		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:10		
Trichloroethene	ND ND	ug/L	0.50	1		01/10/17 13:10		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 13:10		
/inyl chloride	ND ND	ug/L	0.50	1		01/10/17 13:10		
m&p-Xylene	ND ND	ug/L	2.0	1) 179601-4) 179601-23-1	
o-Xylene	ND ND	ug/L ug/L	1.0	1		01/10/17 13:10		
Surrogates	טאו	ug/L	1.0	'		01/10/17 13.10	J 3J-41-0	
Dibromofluoromethane (S)	114	%.	72-126	1		01/10/17 13:10	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/10/17 13:10		
Toluene-d8 (S)	99	%.	79-119	1		01/10/17 13:10		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: DUP005	Lab ID:	2048222005	Collected: 01/05/1	17 00:00	Received: 01	/05/17 12:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3015M DRO/ORO Organics	Analytical	Method: EPA 80	015B Modified Prepa	aration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	NE	D mg/L	0.50	1	01/09/17 07:20	01/09/17 20:26	6	
Oil Range Organics (>C28-C40)	NE) mg/L	1.0	1	01/09/17 07:20	01/09/17 20:26	5	
Surrogates n-Pentacosane (S)	e) %.	16-137	4	01/00/17 07:20	01/00/17 20:26	620.00.2	
o-Terphenyl (S)	60 64		10-137	1 1	01/09/17 07:20 01/09/17 07:20			
5- Terprientyr (3)				'	01/09/17 07.20	01/09/17 20.20	0 04-10-1	
8021 GCV BTEX, MTBE, GRO	Analytical	Method: EPA 80)15/8021					
Gasoline Range Organics Surrogates	NE) ug/L	50.0	1		01/12/17 12:53	3	
4-Bromofluorobenzene (S)	80	6 %.	44-148	1		01/12/17 12:53	3 460-00-4	
6020 MET ICPMS	Analytical	Method: EPA 60	020 Preparation Met	hod: EPA	A 3010			
Arsenic	NE) mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	3 7440-38-2	
Chromium	NE) mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	3 7440-47-3	
_ead	NE) mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	7439-92-1	
<i>V</i> anadium	N) mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:08	3 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical	Method: EPA 60	20 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	NE) ug/L	1.0	1	01/10/17 11:44	01/13/17 23:14	7440-38-2	
Chromium, Dissolved	NE	-	1.0	1	01/10/17 11:44	01/13/17 23:14	7440-47-3	
_ead, Dissolved	NE	_	1.0	1	01/10/17 11:44	01/13/17 23:14	7439-92-1	
Vanadium, Dissolved	NE	J	5.0	1	01/10/17 11:44			L3
7470 Mercury	Analytical	Method: EPA 74	170 Preparation Met	hod: EPA	A 7470			
Mercury	NE) ug/L	0.20	1	01/09/17 15:19	01/09/17 19:55	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical	Method: EPA 74	70 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	NE	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:11	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical	Method: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	NE	D ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	83-32-9	
Acenaphthylene	NE) ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	3 208-96-8	
Anthracene	NE	-	0.10	1	01/10/17 09:46	01/10/17 21:58	3 120-12-7	
Benzo(a)anthracene	NE) ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	3 56-55-3	
Benzo(a)pyrene	NE) ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	3 50-32-8	
Benzo(b)fluoranthene	NE	_	0.10	1	01/10/17 09:46			
Benzo(g,h,i)perylene	NE	•	0.10	1	01/10/17 09:46	01/10/17 21:58	3 191-24-2	
Benzo(k)fluoranthene	NE	•	0.10	1	01/10/17 09:46			
	NE	•	0.10	1	01/10/17 09:46			
ZIII VSENE	NE	•	0.10	1	01/10/17 09:46			
Chrysene Dibenz(a.h)anthracene		- ug/L		1	01/10/17 09:46			
Dibenz(a,h)anthracene) ua/l	N 1N					
Dibenz(a,h)anthracene Fluoranthene	NE	•	0.10					
Dibenz(a,h)anthracene Fluoranthene Fluorene	NE NE	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	86-73-7	
Dibenz(a,h)anthracene Fluoranthene Fluorene ndeno(1,2,3-cd)pyrene	NE NE NE	ug/L ug/L	0.10 0.10	1 1	01/10/17 09:46 01/10/17 09:46	01/10/17 21:58 01/10/17 21:58	8 86-73-7 3 193-39-5	
Dibenz(a,h)anthracene Fluoranthene Fluorene	NE NE) ug/L) ug/L) ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58 01/10/17 21:58 01/10/17 21:58	8 86-73-7 8 193-39-5 8 91-57-6	



Project: PUMA TERMINAL MW SAMPLING

Date: 01/18/2017 12:38 PM

Sample: DUP005	Lab ID: 204	8222005	Collected: 01/05/1	7 00:00	Received: 01	/05/17 12:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Meth	nod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	92	%.	25-150	1		01/10/17 21:58		
Terphenyl-d14 (S)	89	%.	25-150	1	01/10/17 09:46	01/10/17 21:58	1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	20.0	ug/L	4.0	1		01/10/17 13:28	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 13:28	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 13:28	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 13:28	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 13:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 13:28		
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 13:28		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 13:28		
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 13:28		
Chloroethane	ND	ug/L	0.50	1		01/10/17 13:28		
Chloroform	ND	ug/L	0.50	1		01/10/17 13:28		
Chloromethane	ND ND	•	0.50	1		01/10/17 13:28		
,2-Dibromo-3-chloropropane		ug/L				01/10/17 13:28		
· ' '	ND	ug/L	0.20	1 1				
Dibromochloromethane	ND	ug/L	0.50			01/10/17 13:28		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 13:28		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 13:28		
,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:28		
,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:28		
,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:28		
sis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 13:28	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:28	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 13:28	78-87-5	
is-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:28	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:28	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 13:28	100-41-4	
P-Hexanone	ND	ug/L	1.0	1		01/10/17 13:28	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 13:28	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 13:28		
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 13:28		
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 13:28		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 13:28		
Styrene	ND	ug/L	1.0	1		01/10/17 13:28		
,1,2,2-Tetrachloroethane	ND ND		0.50	1		01/10/17 13:28		
etrachloroethene	ND ND	ug/L	0.50	1		01/10/17 13:28		
oluene	ND ND	ug/L	0.50			01/10/17 13:28		
		ug/L		1				
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:28		
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:28		
Trichloroethene	ND	ug/L	0.50	1		01/10/17 13:28		
richlorofluoromethane	ND	ug/L	0.50	1		01/10/17 13:28		
/inyl chloride	ND	ug/L	0.50	1		01/10/17 13:28		
n&p-Xylene	ND	ug/L	2.0	1		01/10/17 13:28	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: DUP005	Lab ID: 20	48222005	Collected: 01/05/1	17 00:00	Received: 0	1/05/17 12:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3260 MSV Low Level	Analytical Me	ethod: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		01/10/17 13:28	95-47-6	
Dibromofluoromethane (S)	112	%.	72-126	1		01/10/17 13:28	3 1868-53-7	
I-Bromofluorobenzene (S)	95	%.	68-124	1		01/10/17 13:28		
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 13:28	3 2037-26-5	
Sample: MW-M14	Lab ID: 20	48222006	Collected: 01/05/1	17 11:34	Received: 0°	1/05/17 12:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Me	ethod: EPA 8	015B Modified Prepa	ration M	ethod: EPA 353	5	•	
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 20:54	1	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		01/09/17 20:54		
n-Pentacosane (S)	63	%.	16-137	1	01/09/17 07:20	01/09/17 20:54	1 629-99-2	
-Terphenyl (S)	65	%.	10-121	1	01/09/17 07:20	01/09/17 20:54	4 84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical Me	ethod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 13:20)	
I-Bromofluorobenzene (S)	90	%.	44-148	1		01/12/17 13:20	460-00-4	
020 MET ICPMS	Analytical Me	ethod: EPA 6	020 Preparation Met	hod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7440-47-3	
.ead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:20	7440-62-2	
020 MET ICPMS, Dissolved (LF)	Analytical Me	ethod: EPA 6	020 Preparation Met	hod: EPA	A 3005A			
rsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	3 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	3 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	3 7439-92-1	
anadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:18	3 7440-62-2	L3
470 Mercury	Analytical Me	ethod: EPA 7	470 Preparation Met	hod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:0	7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Me	ethod: EPA 7	470 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:13	3 7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Me	ethod: EPA 8	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1		01/10/17 22:18		
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	3 208-96-8	
Anthracene	ND	ug/L	0.10	1		01/10/17 22:18		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	3 56-55-3	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: MW-M14	Lab ID: 20	48222006	Collected: 01/05/17	7 11:34	Received: 01	/05/17 12:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Me	ethod: EPA 8	270 by SIM Preparation	on Meth	od: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	3 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	3 207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	3 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	3 206-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46			
Surrogates		- 3						
2-Fluorobiphenyl (S)	86	%.	25-150	1	01/10/17 09:46	01/10/17 22:18	321-60-8	
Terphenyl-d14 (S)	79	%.	25-150	1	01/10/17 09:46	01/10/17 22:18	3 1718-51-0	
8260 MSV Low Level	Analytical Me	ethod: EPA 5	030B/8260					
Acetone	5.0	ug/L	4.0	1		01/10/17 13:46	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 13:46		Ca
Bromodichloromethane	ND ND	ug/L	0.50	1		01/10/17 13:46		
Bromoform	ND ND	_	0.50	1		01/10/17 13:46		
		ug/L						
Bromomethane	ND	ug/L	0.50	1		01/10/17 13:46		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 13:46		
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 13:46		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 13:46		
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 13:46		
Chloroethane	ND	ug/L	0.50	1		01/10/17 13:46		
Chloroform	ND	ug/L	0.50	1		01/10/17 13:46		
Chloromethane	ND	ug/L	0.50	1		01/10/17 13:46		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 13:46		
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 13:46		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 13:46		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 13:46		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:46		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:46		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:46		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 13:46		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:46		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 13:46		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:46		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:46	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 13:46	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 13:46	5 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 13:46	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 13:46	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 13:46	75-09-2	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: MW-M14	e: MW-M14 Lab ID: 2048222006 Collected: 01/05/17 11:34	7 11:34	Received: 0	01/05/17 12:50 N	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 13:46	108-10-1	
Methyl-tert-butyl ether	1.9	ug/L	0.50	1		01/10/17 13:46	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 13:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 13:46	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 13:46	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 13:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:46	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 13:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 13:46	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 13:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 13:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 13:46	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%.	72-126	1		01/10/17 13:46	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/10/17 13:46	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 13:46	2037-26-5	
Sample: FB-010517	Lab ID: 204	3222007	Collected: 01/05/1	7 11:38	Received: 0)1/05/17 12:50 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 80						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 13:46		
Surrogates		-	00.0					
_								
•	89	%.	44-148	1		01/12/17 13:46	460-00-4	
4-Bromofluorobenzene (S)	89 Analytical Meth	%.	44-148	1		01/12/17 13:46	460-00-4	
4-Bromofluorobenzene (S) 8260 MSV Low Level		%.	44-148	1		01/12/17 13:46 01/10/17 14:03		C9
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone	Analytical Meth	%. nod: EPA 50	44-148 030B/8260				67-64-1	C9
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene	Analytical Meth	%. nod: EPA 50 ug/L	44-148 030B/8260 4.0	1		01/10/17 14:03 01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4	C9
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane	Analytical Meth 18.5 ND	%. nod: EPA 50 ug/L ug/L	44-148 030B/8260 4.0 0.50	1		01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4	C9
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform	Analytical Meth 18.5 ND ND	%. nod: EPA 50 ug/L ug/L ug/L	44-148 030B/8260 4.0 0.50 0.50	1 1 1		01/10/17 14:03 01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2	C9
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane	Analytical Methas 18.5 ND ND ND	%. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50	1 1 1 1		01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9	C9
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK)	Analytical Methas 18.5 ND ND ND ND	%. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 0.50	1 1 1 1		01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3	C9
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide	Analytical Methas 18.5 ND ND ND ND ND	%. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0	1 1 1 1 1		01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride	Analytical Methas 18.5 ND ND ND ND ND ND	%. ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0	1 1 1 1 1 1		01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene	Analytical Mether 18.5 ND ND ND ND ND ND ND ND ND ND ND ND ND	%. ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50	1 1 1 1 1 1 1		01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane	Analytical Methods 18.5 ND ND ND ND ND ND ND ND ND N	%. ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50	1 1 1 1 1 1 1 1		01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroform	Analytical Mether 18.5 ND ND ND ND ND ND ND ND ND ND ND ND ND	%. ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1		01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroform Chloromethane	Analytical Mether 18.5 ND ND ND ND ND ND ND ND ND ND ND ND ND	%. ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1		01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane	Analytical Meth	%. ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1 1		01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane	Analytical Meth	%. ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50 0.50 0.5	1 1 1 1 1 1 1 1 1 1 1 1		01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane (EDB)	Analytical Meth	%. ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50 0.50 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1		01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1 106-93-4	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane (EDB) Dichlorodifluoromethane 1,1-Dichloroethane	Analytical Meth	%. ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50 0.50 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		01/10/17 14:03 01/10/17 14:03	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1 106-93-4 75-71-8	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: FB-010517	Lab ID: 204	8222007	Collected: 01/05/1	17 11:38	Received: 0	1/05/17 12:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 14:03	3 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 14:03	3 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 14:03	3 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 14:03	3 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 14:03	3 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 14:03	3 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 14:03	3 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 14:03	3 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 14:03	8 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 14:03	3 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 14:03	3 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 14:03	3 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 14:03	3 1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 14:03	3 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 14:03	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 14:03	3 127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 14:03	3 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	3 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	3 79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 14:03	3 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 14:03	3 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 14:03	3 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 14:03	3 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 14:03	95-47-6	
Surrogates		-						
Dibromofluoromethane (S)	114	%.	72-126	1		01/10/17 14:03	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/10/17 14:03	3 460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 14:03	3 2037-26-5	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

QC Batch: 71889 Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

METHOD BLANK: 301021 Matrix: Water

Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

Blank Reporting

 Parameter
 Units
 Result
 Limit
 Analyzed
 Qualifiers

 Gasoline Range Organics
 ug/L
 ND
 50.0
 01/12/17 10:39

 4-Bromofluorobenzene (S)
 %.
 85
 44-148
 01/12/17 10:39

LABORATORY CONTROL SAMPLE: 301022

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Gasoline Range Organics 500 430 86 61-136 ug/L 4-Bromofluorobenzene (S) 90 44-148 %.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 301348 301349

		2048222003	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Gasoline Range Organics 4-Bromofluorobenzene (S)	ug/L %.	ND	500	500	492	476	93 92	90 92	15-147 44-148	3	20	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

QC Batch: 71614 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299676 Matrix: Water

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 01/09/17 19:05

LABORATORY CONTROL SAMPLE: 299677

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury ug/L 1.0 103 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299678 299679

MS MSD 2048222003 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual ND 1 1.0 75-125 20 Mercury ug/L 1 1.0 102 101

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

QC Batch: 71676 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299994 Matrix: Water

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury, Dissolved ug/L ND 0.20 01/10/17 17:57

LABORATORY CONTROL SAMPLE: 299995

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury, Dissolved ug/L 1.0 102 80-120

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

 QC Batch:
 71617
 Analysis Method:
 EPA 6020

 QC Batch Method:
 EPA 3010
 Analysis Description:
 6020 MET

 Associated Lab Samples:
 2048222002, 2048222003, 2048222004, 2048222005, 2048222005
 2048222005, 2048222006

METHOD BLANK: 299684 Matrix: Water

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/13/17 18:59	
Chromium	mg/L	ND	0.0010	01/13/17 18:59	
Lead	mg/L	ND	0.0010	01/13/17 18:59	
Vanadium	mg/L	ND	0.0050	01/13/17 18:59	

LABORATORY CONTROL SAMPLE: 299685 LCS Spike LCS % Rec Parameter Conc. Result % Rec Limits Qualifiers Units Arsenic mg/L .02 0.020 102 83-115 Chromium mg/L .02 0.020 99 85-115 Lead mg/L .02 0.019 96 84-115 Vanadium mg/L .02 0.020 98 81-115

MATRIX SPIKE & MATRIX SPIR	(E DUPLIC	CATE: 29968	6		299687							
Parameter	Units	2047753015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	11.2 ug/L	.02	.02	0.023	0.022	61	55	80-120	5	20	M1
Chromium	mg/L	ND	.02	.02	0.017	0.017	82	83	80-120	1	20	
Lead	mg/L	ND	.02	.02	0.023	0.023	112	112	80-120	1	20	
Vanadium	mg/L	ND	.02	.02	0.018	0.017	84	83	80-120	1	20	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

QC Batch: 71683 Analysis Method: EPA 6020

QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 300010 Matrix: Water

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND ND	1.0	01/13/17 19:15	
Chromium, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Lead, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Vanadium, Dissolved	ug/L	ND	5.0	01/13/17 19:15	

LABORATORY CONTROL SAMPLE: 300011

Date: 01/18/2017 12:38 PM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L		18.7	94	80-120	
Chromium, Dissolved	ug/L	20	20.4	102	80-120	
Lead, Dissolved	ug/L	20	20.2	101	80-120	
Vanadium, Dissolved	ug/L	20	24.5	123	80-120 L	0

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

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QC Batch: 71630 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level

Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

METHOD BLANK: 299869 Matrix: Water

Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1-Dichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1-Dichloroethene	ug/L	ND	0.50	01/10/17 09:55	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/10/17 09:55	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/10/17 09:55	
1,2-Dichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,2-Dichloropropane	ug/L	ND	0.50	01/10/17 09:55	
2-Butanone (MEK)	ug/L	ND	2.0	01/10/17 09:55	
2-Hexanone	ug/L	ND	1.0	01/10/17 09:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/10/17 09:55	
Acetone	ug/L	ND	4.0	01/10/17 09:55	
Benzene	ug/L	ND	0.50	01/10/17 09:55	
Bromodichloromethane	ug/L	ND	0.50	01/10/17 09:55	
Bromoform	ug/L	ND	0.50	01/10/17 09:55	
Bromomethane	ug/L	ND	0.50	01/10/17 09:55	
Carbon disulfide	ug/L	ND	1.0	01/10/17 09:55	
Carbon tetrachloride	ug/L	ND	0.50	01/10/17 09:55	
Chlorobenzene	ug/L	ND	0.50	01/10/17 09:55	
Chloroethane	ug/L	ND	0.50	01/10/17 09:55	
Chloroform	ug/L	ND	0.50	01/10/17 09:55	
Chloromethane	ug/L	ND	0.50	01/10/17 09:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/10/17 09:55	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/10/17 09:55	
Dibromochloromethane	ug/L	ND	0.50	01/10/17 09:55	
Dichlorodifluoromethane	ug/L	ND	1.0	01/10/17 09:55	
Ethylbenzene	ug/L	ND	0.50	01/10/17 09:55	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/10/17 09:55	
m&p-Xylene	ug/L	ND	2.0	01/10/17 09:55	
Methyl acetate	ug/L	ND	2.0	01/10/17 09:55	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/10/17 09:55	
Methylene Chloride	ug/L	ND	0.50	01/10/17 09:55	
o-Xylene	ug/L	ND	1.0	01/10/17 09:55	
Styrene	ug/L	ND	1.0	01/10/17 09:55	
Tetrachloroethene	ug/L	ND	0.50	01/10/17 09:55	
Toluene	ug/L	ND	0.50	01/10/17 09:55	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/10/17 09:55	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/10/17 09:55	
Trichloroethene	ug/L	ND	0.50	01/10/17 09:55	
Trichlorofluoromethane	ug/L	ND	0.50	01/10/17 09:55	

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Project: PUMA TERMINAL MW SAMPLING

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METHOD BLANK: 299869 Matrix: Water

Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND ND	0.50	01/10/17 09:55	
4-Bromofluorobenzene (S)	%.	96	68-124	01/10/17 09:55	
Dibromofluoromethane (S)	%.	107	72-126	01/10/17 09:55	
Toluene-d8 (S)	%.	102	79-119	01/10/17 09:55	

LABORATORY CONTROL SAMPLE	: 299870					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits C	Qualifiers
1,1,1-Trichloroethane	ug/L	50	54.9	110	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	49.4	99	15-179	
1,1,2-Trichloroethane	ug/L	50	46.8	94	58-144	
1,1-Dichloroethane	ug/L	50	56.2	112	63-129	
1,1-Dichloroethene	ug/L	50	56.0	112	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	48.0	96	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	48.9	98	52-161	
1,2-Dichloroethane	ug/L	50	50.4	101	57-148	
1,2-Dichloropropane	ug/L	50	53.0	106	66-128	
2-Butanone (MEK)	ug/L	50	54.6	109	32-183	
2-Hexanone	ug/L	50	46.6	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	48.8	98	26-171	
Acetone	ug/L	50	54.0	108	22-165	
Benzene	ug/L	50	55.9	112	62-131	
Bromodichloromethane	ug/L	50	47.6	95	69-132	
Bromoform	ug/L	50	42.9	86	35-166	
Bromomethane	ug/L	50	47.6	95	34-158	
Carbon disulfide	ug/L	50	74.4	149	31-128 L0	
Carbon tetrachloride	ug/L	50	51.2	102	54-144	
Chlorobenzene	ug/L	50	50.2	100	70-127	
Chloroethane	ug/L	50	39.3	79	17-195	
Chloroform	ug/L	50	51.3	103	73-134	
Chloromethane	ug/L	50	60.3	121	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.7	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	51.6	103	72-138	
Dibromochloromethane	ug/L	50	45.6	91	49-146	
Dichlorodifluoromethane	ug/L	50	51.3	103	10-179	
Ethylbenzene	ug/L	50	49.1	98	66-126	
Isopropylbenzene (Cumene)	ug/L	50	49.5	99	51-138	
m&p-Xylene	ug/L	100	101	101	65-129	
Methyl acetate	ug/L	50	51.3	103	20-142	
Methyl-tert-butyl ether	ug/L	50	50.2	100	37-166	
Methylene Chloride	ug/L	50	55.2	110	46-168	
o-Xylene	ug/L	50	48.1	96	65-124	
Styrene	ug/L	50	49.3	99	72-133	
Tetrachloroethene	ug/L	50	49.0	98	46-157	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

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LABORATORY CONTROL SAMPLE:	299870					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Toluene	ug/L	50	52.3	105	69-126	
trans-1,2-Dichloroethene	ug/L	50	53.7	107	60-129	
trans-1,3-Dichloropropene	ug/L	50	51.0	102	59-149	
Trichloroethene	ug/L	50	52.2	104	67-132	
Trichlorofluoromethane	ug/L	50	55.1	110	39-171	
Vinyl chloride	ug/L	50	44.5	89	27-149	
4-Bromofluorobenzene (S)	%.			97	68-124	
Dibromofluoromethane (S)	%.			109	72-126	
Toluene-d8 (S)	%.			102	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299871 299872												
			MS	MSD								
		2048288001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	64.9	56.6	130	113	54-137	14	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	57.0	53.7	114	107	15-187	6	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	53.0	48.4	106	97	59-148	9	20	
1,1-Dichloroethane	ug/L	ND	50	50	64.1	55.4	128	111	59-133	15	20	
1,1-Dichloroethene	ug/L	ND	50	50	64.8	55.6	130	111	44-146	15	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	54.6	51.8	109	104	23-166	5	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	54.8	49.6	110	99	55-166	10	20	
1,2-Dichloroethane	ug/L	ND	50	50	56.3	50.6	113	101	56-154	11	20	
1,2-Dichloropropane	ug/L	ND	50	50	58.4	51.6	117	103	62-135	12	20	
2-Butanone (MEK)	ug/L	ND	50	50	67.3	59.2	135	118	20-205	13	20	
2-Hexanone	ug/L	ND	50	50	56.8	52.6	114	105	25-189	8	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	58.4	53.7	117	107	23-184	8	20	
Acetone	ug/L	0.0078 mg/L	50	50	66.7	63.4	118	111	11-217	5	20	
Benzene	ug/L	ND	50	50	62.0	54.0	124	108	52-141	14	20	
Bromodichloromethane	ug/L	ND	50	50	53.5	47.2	107	94	70-134	12	20	
Bromoform	ug/L	ND	50	50	48.0	43.0	96	86	37-171	11	20	
Bromomethane	ug/L	ND	50	50	50.7	45.9	101	92	34-155	10	20	
Carbon disulfide	ug/L	ND	50	50	91.4	73.6	183	147	28-130	22	20	M0,R1
Carbon tetrachloride	ug/L	ND	50	50	56.6	48.4	113	97	48-146	16	20	
Chlorobenzene	ug/L	ND	50	50	56.2	49.1	112	98	67-129	13	20	
Chloroethane	ug/L	ND	50	50	54.8	48.0	110	96	12-192	13	20	
Chloroform	ug/L	ND	50	50	58.1	50.9	116	102	66-143	13	20	
Chloromethane	ug/L	ND	50	50	53.4	45.2	107	90	14-155	17	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.2	53.2	122	106	56-141	14	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	56.9	49.5	114	99	70-139	14	20	
Dibromochloromethane	ug/L	ND	50	50	50.4	44.9	101	90	50-150	12	20	
Dichlorodifluoromethane	ug/L	ND	50	50	60.8	52.0	122	104	10-173	16	20	
Ethylbenzene	ug/L	ND	50	50	55.3	48.7	111	97	57-135	13	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	55.6	52.7	111	105	40-146	5	20	

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Project: PUMA TERMINAL MW SAMPLING

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MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 29987	1 MS	MSD	299872							
		2048288001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
m&p-Xylene	ug/L	ND	100	100	112	99.9	112	100	56-136	11	20	
Methyl acetate	ug/L	ND	50	50	59.9	50.5	120	101	10-142	17	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	58.2	51.9	116	104	35-176	12	20	
Methylene Chloride	ug/L	ND	50	50	63.0	54.4	126	109	45-166	15	20	
o-Xylene	ug/L	ND	50	50	54.6	47.8	109	96	57-133	13	20	
Styrene	ug/L	ND	50	50	55.1	49.4	110	99	58-144	11	20	
Tetrachloroethene	ug/L	ND	50	50	55.4	50.2	111	100	48-143	10	20	
Toluene	ug/L	ND	50	50	58.3	50.7	117	101	59-136	14	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	65.3	54.6	131	109	57-132	18	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	56.9	49.9	114	100	59-154	13	20	
Trichloroethene	ug/L	ND	50	50	59.5	52.4	119	105	58-140	13	20	
Trichlorofluoromethane	ug/L	ND	50	50	68.4	58.4	137	117	24-175	16	20	
Vinyl chloride	ug/L	ND	50	50	54.0	45.2	108	90	21-150	18	20	
4-Bromofluorobenzene (S)	%.						97	100	68-124			
Dibromofluoromethane (S)	%.						112	108	72-126			
Toluene-d8 (S)	%.						102	101	79-119			

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

QC Batch: 71577 Analysis Method: EPA 8015B Modified QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299594 Matrix: Water

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
mg/L	ND ND	0.25	01/09/17 15:11	
mg/L	ND	0.50	01/09/17 15:11	
%.	49	16-137	01/09/17 15:11	
%.	58	10-121	01/09/17 15:11	
	mg/L mg/L %.	Units Result mg/L ND mg/L ND %. 49	Units Result Limit mg/L ND 0.25 mg/L ND 0.50 %. 49 16-137	Units Result Limit Analyzed mg/L ND 0.25 01/09/17 15:11 mg/L ND 0.50 01/09/17 15:11 %. 49 16-137 01/09/17 15:11

LABORATORY CONTROL SAMPLE: 299595

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		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	0.29	73	10-115	
n-Pentacosane (S)	%.			55	16-137	
o-Terphenyl (S)	%.			68	10-121	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

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QC Batch: 71665 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299959 Matrix: Water

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND ND	0.10	01/10/17 15:39	
Acenaphthene	ug/L	ND	0.10	01/10/17 15:39	
Acenaphthylene	ug/L	ND	0.10	01/10/17 15:39	
Anthracene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(a)anthracene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(a)pyrene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Chrysene	ug/L	ND	0.10	01/10/17 15:39	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/10/17 15:39	
Fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Fluorene	ug/L	ND	0.10	01/10/17 15:39	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/10/17 15:39	
Naphthalene	ug/L	ND	0.10	01/10/17 15:39	
Phenanthrene	ug/L	ND	0.10	01/10/17 15:39	
Pyrene	ug/L	ND	0.10	01/10/17 15:39	
2-Fluorobiphenyl (S)	%.	82	25-150	01/10/17 15:39	
Terphenyl-d14 (S)	%.	86	25-150	01/10/17 15:39	

LABORATORY CONTROL SAMPLE:	299960					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.7	92	35-150	
Acenaphthene	ug/L	4	3.7	91	35-150	
Acenaphthylene	ug/L	4	3.6	91	35-150	
Anthracene	ug/L	4	4.4	111	35-150	
Benzo(a)anthracene	ug/L	4	3.8	95	35-150	
Benzo(a)pyrene	ug/L	4	3.5	88	35-150	
Benzo(b)fluoranthene	ug/L	4	3.5	88	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.3	107	35-150	
Benzo(k)fluoranthene	ug/L	4	3.5	88	35-150	
Chrysene	ug/L	4	3.5	89	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.7	117	35-150	
Fluoranthene	ug/L	4	3.5	86	35-150	
Fluorene	ug/L	4	3.5	89	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.5	112	35-150	
Naphthalene	ug/L	4	3.4	84	35-150	
Phenanthrene	ug/L	4	3.9	97	35-150	
Pyrene	ug/L	4	3.4	85	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

LABORATORY CONTROL SAMPLE: 299960 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 2-Fluorobiphenyl (S) %. 25-150 117 Terphenyl-d14 (S) %. 114 25-150

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71629

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71745

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71749

[1] Insufficient sample volume to perform MS/MSD analysiws.

ANALYTE QUALIFIERS

Date: 01/18/2017 12:38 PM

inant.

LO Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2048222002	EB-010517	EPA 3535	71577	EPA 8015B Modified	71629
2048222003	MW-48A	EPA 3535	71577	EPA 8015B Modified	71629
2048222004	MW-109A	EPA 3535	71577	EPA 8015B Modified	71629
048222005	DUP005	EPA 3535	71577	EPA 8015B Modified	71629
048222006	MW-M14	EPA 3535	71577	EPA 8015B Modified	71629
048222001	TB-010517	EPA 8015/8021	71889		
048222002	EB-010517	EPA 8015/8021	71889		
048222003	MW-48A	EPA 8015/8021	71889		
048222004	MW-109A	EPA 8015/8021	71889		
048222005	DUP005	EPA 8015/8021	71889		
048222006	MW-M14	EPA 8015/8021	71889		
048222007	FB-010517	EPA 8015/8021	71889		
048222002	EB-010517	EPA 3010	71617	EPA 6020	71656
048222003	MW-48A	EPA 3010	71617	EPA 6020	71656
048222004	MW-109A	EPA 3010	71617	EPA 6020	71656
048222005	DUP005	EPA 3010	71617	EPA 6020	71656
048222006	MW-M14	EPA 3010	71617	EPA 6020	71656
048222002	EB-010517	EPA 3005A	71683	EPA 6020	71749
048222003	MW-48A	EPA 3005A	71683	EPA 6020	71749
048222004	MW-109A	EPA 3005A	71683	EPA 6020	71749
048222005	DUP005	EPA 3005A	71683	EPA 6020	71749
048222006	MW-M14	EPA 3005A	71683	EPA 6020	71749
048222002	EB-010517	EPA 7470	71614	EPA 7470	71654
048222003	MW-48A	EPA 7470	71614	EPA 7470	71654
048222004	MW-109A	EPA 7470	71614	EPA 7470	71654
048222005	DUP005	EPA 7470	71614	EPA 7470	71654
048222006	MW-M14	EPA 7470	71614	EPA 7470	71654
048222002	EB-010517	EPA 7470	71676	EPA 7470	71753
048222003	MW-48A	EPA 7470	71676	EPA 7470	71753
048222004	MW-109A	EPA 7470	71676	EPA 7470	71753
048222005	DUP005	EPA 7470	71676	EPA 7470	71753
048222006	MW-M14	EPA 7470	71676	EPA 7470	71753
048222002	EB-010517	EPA 3510	71665	EPA 8270 by SIM	71745
048222003	MW-48A	EPA 3510	71665	EPA 8270 by SIM	71745
048222004	MW-109A	EPA 3510	71665	EPA 8270 by SIM	71745
048222005	DUP005	EPA 3510	71665	EPA 8270 by SIM	71745
048222006	MW-M14	EPA 3510	71665	EPA 8270 by SIM	71745
048222001	TB-010517	EPA 5030B/8260	71630		
048222002	EB-010517	EPA 5030B/8260	71630		
048222003	MW-48A	EPA 5030B/8260	71630		
048222004	MW-109A	EPA 5030B/8260	71630		
048222005	DUP005	EPA 5030B/8260	71630		
048222006	MW-M14	EPA 5030B/8260	71630		
048222007	FB-010517	EPA 5030B/8260	71630		



WO#: 2048222

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Pace Analytical*

Sample Condition Upon Receipt WO#:2048222

PM: JAR1

Due Date: 01/19/17

CLIENT: 98-ARCADISPR

Urb. Jardines de Guaynabo Calle Mrginal Blq A-10 Guaynabo, PR 00969

Project #:

Courier: Pace Courier Hired Courie	r □ Fed X	□ UF	s c	DHL	□ USPS / Customer □ Oth
Custody Seal on Cooler/Box Present: [se	e COC]				Custody Seals intact: □Yes □No
Therometer □ Therm Fisher IR 4 □ Therm Fisher IR 6 □ Therm Fisher IR 7	Type of Ic	e: (V	let Blue	None	Samples on ice: [see COC]
Cooler Temperature: [see COC]	emp should be	above fr	eezing to (3°C	Date and Initials of person examining contents:
Femp must be measured from Temperature blank whe	n present	i minin	Comment	s:	
Temperature Blank Present"?	□Yes □No	DN/A	1		-
Chain of Custody Present:	Øyes □No	D □N/A	2		
Chain of Custody Complete:	√Yes □No	o □N/A	3	•	
Chain of Custody Relinquished:	ÓYes □No	o □N/A	4	,	
Sampler Name & Signature on COC:	ZYes □No	o □n/a	5		
Samples Arrived within Hold Time:	Yes □No	DN/A	6		
Sufficient Volume:	Yeş □No	DN/A	7		
Correct Containers Used:	ZYes □No	DN/A	8		
Filtered vol. Rec. for Diss. tests	□Yes □No	√ZÍN/A	9		
Sample Labels match COC:	√ Yes □No	DN/A	10		
All containers received within manafacture's precautionary and/or expiration dates.	ZYes □No	D □N/A	11		
All containers needing chemical preservation have een checked (except VOA, coliform, & O&G).	re □Yes □No	DINTA	12		
All containers preservation checked found to be compliance with EPA recommendation.	in □Yes □No	ZK√A			preserative added? □Yes □No cord lot no.: HNO3 H2SO4
Headspace in VOA Vials (>6mm):	□Yes □No	J⊒K/A	14		
Trip Blank Present:	□ Yes □ No)	15		
Client Notification/ Resolution:					
Person Contacted:					Date/Time:
Comments/ Resolution:					
· · · · · · · · · · · · · · · · · · ·					

Sample Condition Upon Receipt

	verbend. Blvd., Suite F , LA 70087	P	roject #	20
Courier: □ Pace Courier □ Hi	red Courier Fed X	□ UP\$	□ DHL	□ USPS □ Customer □ Other
Custody Seal on Cooler/Box Present:	[see COC]			Custody Seals intact: Д☐Yes ☐No
Therometer	6 Type of Ice	e: Wet Blu	ue None	Samples on ice: [see COC]
Cooler Temperature: [see COC]	Temp should be	above freezing t	o 6°C	Date and Initials of person examining contents:
Temp must be measured from Temperature	blank when present	Comme	ints:	
Temperature Blank Present"?	□Yes □No	JZŅ/A 1		
Chain of Custody Present:	□¥es □No	□N/A 2		
Chain of Custody Complete:	yes □No	□N/A 3		
Chain of Custody Relinquished:	√es □No	□N/A 4		
Sampler Name & Signature on COC:	√Yes □No	□N/A 5		
Samples Arrived within Hold Time:	√eş □No	□N/A 6		
Sufficient Volume:	Yes □No	□N/A 7		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Correct Containers Used:	Yes □No	□N/A 8		
Filtered vol. Rec. for Diss. tests	□Yes □No	N/A 9		
Sample Labels match COC:		□N/A 10		
All containers received within manafact precautionary and/or expiration dates.				
All containers needing chemical preser been checked (except VOA, coliform, 8		□n/A 12		
All containers preservation checked for compliance with EPA recommendation.				reserative added? □Yes □No ord lot no.: HNO3 H2SO4
Headspace in VOA Vials (>6mm):	□Yes ■No	□n/a 14		
Trip Blank Present:	Yes 🗆 No	15		
Client Notification/ Resolution: Person Contacted:				Date/Time:
Comments/ Resolution:				
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Section A	Section I		- 1 - 6 -							tion														Pa	ge:		of	1.	
Required Client Information: Company:	Required Report To	_			- 1	-		-	and 2 division in which the	ice Ir	nformat :	on:	-			_	_	-		1				1		162	214:	33	
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SAMPLE ID Oil Wipe	OL WP	es)	9=9)					AT CO	ERS						1	10	0	10	250	3	30				Chlorina (V/N)	2			
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9 FB-122116		718	0-			12/21/6	1615		4			4				X	X												
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11 EB-122216		74	E-			12/2/16	0842		19	S	1	4				1	×	X	X	7		_				1			
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Section A	Section I								Sec	tion (Page:		2	of Z	. 1 3
Required Client Information: Company:	Required Report To:		-		7 1:				-	ice Info	ormation		_	_				1 101	7		n di	100	Li	إر سا	162	143	Δ
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(A-Z, 0-9 / ,-) Wipe	WP AR TS	BE						IP AT	# OF CONTAINERS	٦					Test	3	0	100		3				Chlorine (Y/N)			With the
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5 MW-15B (MSD)	ALI II A	M	Go	-1011		12/22/16	1142	100	10	5	1 1	1	\Box	+	-	\geq	X	××	×	X	+		-	+	0 18 11	11	100
6 FB-122216		Wr	0-			1828/1	1150		4	H		1	H	ve u		X	X	-	1		+	Н	+	3 (34)	57.11		
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Section A Required Client Information:	Section B Required Project Information:	1	Section C		Page: of Z
Company: Arcodis	Report To: Frain	Caldera	Invoice Information: Attention:		2075147
Address: city vion Plazo 15-12	Сору То:	CX100 61	Company Name:	REGULATORY	
401 Rd 165 HM 12 boards P.P	3.35	THE RESERVE TO THE RE	Address:	☐ NPDES ☐	GROUND WATER DRINKING WATER
Email To:	Purchase Order No.:		Pace Quote Reference:	r ust r	RCRA OTHER
Phone: Requested Due Date/TAT:	Project Name:	-miral MW-sampline 2. 1605B	David David	e dondo Site Location	PR James 1
		r. 1002 D	06	Requested Analysis Filtere	ed (Y/N)
Section D Matrix C Required Client Information MATRIX /	CODE S S S S S S S S S S S S S S S S S S S	COLLECTED	Preservatives	N/A	Sur 4 Sur 4 scribs
Drinking Water Water Waste Water Product Soil/Solid SAMPLE ID Oil	S=GRAB		Southection	S SOIS SOIS SOIS CTONY CTONY	(N/X) e
(A-Z, 0-9 / ,-) Wipe Air Sample IDs MUST BE UNIQUE Tissue Other	MATRIX CODE SAMPLE TYPE (0		# OF CONTAINERS # OF CONTAINERS Unpreserved #2SO4 HNO3 HCI NaOH Na2S2O3 Methanol Other	S Tes	Residual Chlorine (Y/N)
				LAna VOC G-RC DRO S VO MeTe	Pace Project No./ Lab I.D.
1 TB-121916	VT G	12/19/4 LAB	4 4	XX	
2 EB-121916 3 MW-P120	m o	12/19/16 095%	105 14	XXXXXX	
3 MW - PI20 4 MW - PI22	WT G	12/19/16 1110	105 14	KXXXXX	
5 MW-P123	MT G	12/19/16 1421	10 5 1 4	XXXXXX	
6 Mw - P124	WT 6-	12/19/16 1545	105 14		
7 MW-P121	WT C-	2/11/16 1627	105 14	XXXXXX	1 2 2 1 2 2 1
8 FB-121916	WT G	12/19/16 1645	4 4	22000	194, 1
9 TB-122016	WY Lo-	12/20/40 LAB	4 4		
10 EB-122016	~7 G	2/20/16 0833	105 14	XXXXX	
11 MW-P119	W- (3-)	12/20/110 0918	10 5 14	X	
12 MW-P118	WT O-	12/20/16/1009	10 5 14	XXXXXX	
ADDITIONAL COMMENTS	RELINQUISHED BY	//AFFILIATION DATE	TIME ACCEPTE	D BY / AFFILIATION DATE	TIME SAMPLE CONDITIONS
Level II	Andri Colon /	Arcado 12/20/16	11:18	- PAUS phollo	16:15 20 Y N Y
**				1 11/10	
AC.			V		
			E TOTAL CONTRACTOR OF THE PARTY	* 77	
		SAMPLER NAME AND SIGNATUR	RE		act ler on
	2	PRINT Name of SAMPLER	R: Andri Colon		vved or (Y/N) (Y/N) (Y/N) Ss Intai
A L		SIGNATURE of SAMPLER		DATE Signed (MM/DD/YY): 12/20/14	Received on Ice (Y/N) Custody Sealed Cooler (Y/N) Samples Intact (Y/N)



	Section B	191							tion C													Page:		2	of Z	N.
	Required Pr Report To:			Calde			-	Atten	ce Info	ormatic	n:	-	_		_	_		7						2	075	146
	Сору То:	1-1-	rein	Cariac	1.3.7			Com	pany N	lame:	ſ.	_						REC	SULATO	DRY	AGEN	ICY		Sens.	010.	2 10
	-	CMOVE IN THE	1		-	-	-	Addr	ess:	7		92	_		-				NPDES	_			D WA	TER [DRINKI	ING WATER
The second of th	Purchase Or			<u> </u>					Quote							to.		-	UST	Γ	RC			Г	OTHER	
Phone: -171- 4000 Fax -171-4046	Project Nam	e: D	ma To	adone) mm	40-01/2		Pace Mana	Project	-		_	Re	20	->			-	Location	on	_	^				
Requested Due Date/TAT:	Project Num		-005")		Profile		0.0	-	16	/ 00	,,,(1/2		Jegi	STAT	E:	_p	R		dinasi	10 5	9
				100-				_						T		Requ	ested	Anal	ysis Fil	tered	(Y/N)	T			
Section D Matrix Co Required Client Information MATRIX / (odes CODE	to left) OMP)		COLL	ECTED					Pre	serva	atives	s	N/A					11		-		if	Sala	# <u>SII</u>	
Drinking Water Water Waste Water Product Soil/Solid SAMPLE ID	P	(See valid codes to left) (G=GRAB C=COMP)	COMP	OSITE RT	COMPC END/G		COLLECTION	4S						t 1	0	10	5	rems	Metols				e (Y/N)	4, 1		
(A-Z, 0-9 / ;-) Wipe (A-Z, 0-9 / ;-) Air Sample IDs MUST BE UNIQUE Tissue Other	AR TS	MATRIX CODE SAMPLE TYPE (0					SAMPLE TEMP AT	# OF CONTAINERS	npreserved	H ₂ SO ₄	HCI	Na ₂ S ₂ O ₃	Methanol	Analysis Test	JOSES 8701	10	RO/ORO 4015	otals /	SSalved				Residual Chlorine (Y/N)			
	_		DATE	TIME	DATE	TIME	(y)	_	> =	II	I Z	ZZ	20	1=	>	0 2	94	3 8	<u>a</u>	-	1960		ď	Pace	Project	No./ Lab I.D.
1 MW-K3A 2 MW-AD-01		Ta			2/20/16	1113		10	5	1.	4	+	\vdash	172	X	~	* 7			+	Н		+		12	
3 MW-57A		T 0-			2/20/16	1312	1	10	5	+	4	+	\vdash	-	C	2	\ \ \ \	(×)	20	+	\vdash	+	+		2	
4 MW-AD-D3		T (3-			12/20/16		IT,	10	5)	4			48	2	2	XX	120	3				H	4 - F		July July
5 FB - 122016		T 6-			2/20/16	1525		10	5	١	4			. C/A	X	X	XX	X	<	1 -		N.	\Box			401
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ADDITIONAL COMMENTS	F	RELINQU	IISHED BY	AFFILIATI	ON	DATE		Т	ME			ACC	CEPTE	DBY	AF	FILIAT	ION		DATE		TIME	\top	ш	SAMI	LE CONDIT	TIONS
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Section A Required Client Information:		Section		ect Info		grade sold					tion C	rmation		75	1195		ide				P.	age:	- 1	of Z	
Company: Arcadis		Report T			-ou'n	(a/de	unn			Atter		mauon							\neg				2	2075	136
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Email To:	4	Purchase						P	Α,	Pace	Quote ence:			_						UST	┌ RCR	А	Г	OTHE	R
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Section D Required Client Information	Matrix C	CODE	to left)	C=COMP)	i k	COLL	ECTED	11 54	u-	ď.		Pres	ervati	ves		N/A						lei.	inaq.i	412	
SAMPLE ID	Drinking Water Water Waste Water Product Soil/Solid Oil	WT WW P SL OL	(see valid codes to left)	(G=GRAB C=CO	COMP(STAI		COMPC END/G		COLLECTION	RS						t 1	91	5015	00	netals		(N/N)			
(A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQU	Wipe Air JE Tissue Other	WP AR TS OT	MATRIX CODE	SAMPLE TYPE (0	DATE	TIME	DATE	TIME	SAMPLE TEMP AT	# OF CONTAINERS	Unpreserved	12504 1NO ₃	NaOH	Na ₂ S ₂ O ₃ Methanol	Other	alysis	Vars 836	7060	168 83V	Stand /		Residual Chlorine (Y/N)			
1 TB-122	216		PT	6-	DATE	/	DATE	LAB	0,	4		1	6	2 2		-	< >	0	V 1 ~	- G	+++	+	Pa	ce Project	No./ Lab I.D.
2 EB-1201	3	4	mp	(90			2/27/16	0834		10	5	1 4			П	5	× ×	· ×	2	××			1		100
3 MW-18D			WT	60			2/27/16	0934		10	5	+	4		П		XX	X	×>	<>		77			
4 MW-87A			W	Go		200	12/23/16	1029		10	5	1	4	-	П)	<>	4	XX	<×			T. Service		450
5 MW-91A	2		WI	6-			12/23/16	1118		10	5	1	4			D	(>	X	20	K)			1		196
6 MW-88A			W	6			12/20/1	1253		10	S	7 4	4		П	>	<>	X	××	<×					4 4
7 MW-99A		N I	67	6			12/29/16	1346		10	S	1 4	9		П	6	12	14	><>	OK			3	Š.	
8 MW-98A	4		W-T	6		N	12/21/16	1503		10	S	1 6	1		П	3	43	*	\times	X			4	Yo.	
9 MW-30A	5		wr	6			12/27/16	1553		10	S	1 4	ŧ		П	12	47	54	><>	4.					
0 FB-122711	9		W	6			12/2/16	1558	100	4		4			П	5	(×							,	
1 - TR-122X	11.		W	0-			12/24/1	LAB		4		(d.		П	1	X								
2 EB-1228			WT	6		14	12/28/	0851		10	S	1 4	8	100		×	X	X	XX	×					
ADDITIONAL COMM	ENTS		REL	INQUI	SHED BY /	AFFILIATI	ON	DATE		Т	ME		1	ACCE	TED	BY / A	AFFILI	ATION	1	DATE	TIME	п	SAM	IPLE COND	ITIONS
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					* [SIGNATUR	E of SAMPL	ER:	M	1					. [DATE (MM/E	Signe D/YY)	d : 12,	1	**	Теп	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)



	ection A Section quired Client Information: Require		ect Info	ormation:	Ont.					tion C												Pa	ige:	2	of S			
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_	110			=002	1609,	В	V -	-	_	-						-) Anu	osto	d Ans	alysis Fi			-		- 1	112		4
100	Section D Matrix Codes Required Client Information MATRIX / CODE	o left)	(AM)	11.	COLL	ECTED					Pres	ervat	tives		→ N/A		equ	CSTE	u Alle	llysis i i	itere	1714)	П	1,600.2				7
	Drinking Water DW Water WT Waste Water WT Waste Water Product P Soil/Solid SL SAMPLE ID Oil (see valid code	(G=GRAB C=COMP)	COMP. STA		COMPO END/G		COLLECTION	RS						1	Q	10	50015	Jesus A	Motals			(V/N)		1 2 5				
ITEM #	(A-Z, 0-9 /,-) Wipe WP (A-Z, 0-9 /,-) Air Ar Sample IDs MUST BE UNIQUE Tissue TS Other OT	MATRIX CODE	TYPE	DATE	TIME	DATE	TIME	SAMPLE TEMP AT	# OF CONTAINERS	Unpreserved	HNO ₃	NaOH	Na ₂ S ₂ O ₃	Methanol	Analysis Test	VOC5 426	08 C	ORO,	Metals /	Dissolved			Residual Chlorine (Y/N)	Pac	e Proje	ct No.) Lab I.D.	
1		V7	6		1	12/25/6	7600	\neg	10	C	14		T			X	7	47	120	×	+		H	1 4	or roje	01 140.	- Lab I.D.	1
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5	MVTP-2	VT	6			12/20/1	1333	- 1	10	5	14			-1	-	×	×	4	<×	×					111		Salter - Los	1
6	EB-10)	VT	0-			12/24/1	1416		10	5	16					×	×	X	(X	<			1			-	g (saly)	1
7	EB-102	VT	E-	-		12/28/16	1459		10	S	19		-	10		×	×	XX	X	X								1
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Phone: 187-117-4000 Fax: 187-117-4046	Project N	ame:	0 247	m la	W 4mm	0 \				Proje	ct T	rai	- R	690	70				5	ite Lo	cation			Т			
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Section A Required Client Information:	Section I		ct Info	mation:	gul. T					tion (c ormatio	n:											Pag	je:	1	of Z	
Company: Arcads	Report To:	0 0	EF	rain	Cald	070			Atten	-															20	7513	38
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6 MY-EB105		M	6			01/03/19	1345		10	S	-	4			1,	X	X	X	イン	14							
7 MW- EB105 (MS)		M	6			01/03/17	1345	III.	10	S	1	4			30	×	X	X	14	X	F 1						
8 MW- BB105 (MSD)		WT	6			01/03/11	1345		10	5	-	4			130	X	X	X	XX	X							
9 DUPOOU		W	6			01/03/11			10	5	1	4		П		×	×	4	7 7	X							
10 MW-EB106		MT	6		-	01/03/11	1428		10	5	1	4				\times	X	X	X	X							
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Section A Required Client Information:	Section Require		ect Info	rmation:					Secti		mation										F	Page:	2	of Z	
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3 MW-48A		VT	0			1105/17	0942		10	5	1	4			П	1	4	7	44	+	X		3			\Box		ý.	1
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Section A Required Client Information:	Water Street,	d Proje	ect Inf	ormation:				il.	Section Invoice In		ation:		74.00								Pa	age:	1	of]		
Company: Arcads	Report 7	24-2	1	Frair	(4	1200	_		Attention	1:								7					20	752	16	3
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Wat Was Proc Soil SAMPLE ID Oil Wip (A-Z, 0-9 / ,-) Air	ter WT ste Water WW duct P //Solid SL OL e WP AR	(see valid	(G=GRAB	COMPO		COMP END/	OSITE GRAB	P AT COLLECTION	INERS					Test ↓	4240	510	18 80 S	Instan	Metas			(N/N)	(847)			
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Email To:	Purchase	Order	No.:			-				Quote		_								UST		RCRA			OTHER	
Email To: EFron Cabron @arcada_ws.com Phone; 1-4000 Fax; 1-711-4006	Project N	ame:	, ,	- T	1	nal C	W Sam	- 1 m	Refer	Projec	t	T		(5	(૯)	0	2		s	ite Loca	tion				3	
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Section D Matrix Coc Required Client Information MATRIX / Co	ODE	to left)	C=COMP)		COLL	ECTED	114		A		P	rese	vativ	es		N/A									10	ng la la	417V-00	
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ITEM#	j.	MATRIX	SAMPLE	DATE	TIME	DATE	TIME	SAMPL	# OF CONTAINERS	Unpre	H ₂ SÖ₄	S S S	NaOF	Na ₂ S ₂ O ₃ Methanol	Other	# Analysis	2	86	5	2	₹				Residual Chlorine (Y/N)	Pace	e Project I	No./ Lab I.D.
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February 14, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 19, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

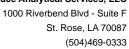
Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048968001	TB-011817	Water	01/18/17 00:00	01/19/17 15:39
2048968002	EB-011817	Water	01/18/17 09:22	01/19/17 15:39
2048968003	MW-38A	Water	01/18/17 11:16	01/19/17 15:39
2048968004	MW-84B2	Water	01/18/17 12:31	01/19/17 15:39
2048968005	MW-84A	Water	01/18/17 13:23	01/19/17 15:39
2048968006	MW-17B	Water	01/18/17 15:23	01/19/17 15:39
2048968007	FB-011817	Water	01/18/17 15:24	01/19/17 15:39
2048968008	TB-011917	Water	01/19/17 00:00	01/19/17 15:39
2048968009	EB-011917	Water	01/19/17 10:00	01/19/17 15:39
2048968010	MW-77B	Water	01/19/17 11:17	01/19/17 15:39
2048968011	MW-20B	Water	01/19/17 12:25	01/19/17 15:39
2048968012	MW-78B	Water	01/19/17 13:15	01/19/17 15:39
2048968013	MW-21B	Water	01/19/17 13:56	01/19/17 15:39
2048968014	DUP007	Water	01/19/17 00:00	01/19/17 15:39
2048968015	FB-011917	Water	01/19/17 14:02	01/19/17 15:39



SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048968001	TB-011817	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968002	EB-011817	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048968003	MW-38A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048968004	MW-84B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048968005	MW-84A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048968006	MW-17B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048968007	FB-011817	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048968008	TB-011917	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048968009	EB-011917	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048968010	MW-77B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048968011	MW-20B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048968012	MW-78B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968013	MW-21B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968014	DUP007	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968015	FB-011917	EPA 8015/8021	МНМ	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N



PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H2: Extraction or preparation conducted outside EPA method holding time.

• MW-17B (Lab ID: 2048968006)

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: 72656

S2: Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample reanalysis).

• MW-17B (Lab ID: 2048968006)

• n-Pentacosane (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72656

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 73658

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

Batch Comments:

• QC Batch: 72656

Analyte Comments:

QC Batch: 72656

1b: Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Reanalysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

• MW-17B (Lab ID: 2048968006)

• n-Pentacosane (S)

QC Batch: 73658

1b: Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Reanalysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

• MW-17B (Lab ID: 2048968006)

• n-Pentacosane (S)



PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

15 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



St. Rose, LA 70087 (504)469-0333

PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 6020

Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72609

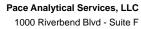
A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304155)
 - Chromium
 - Vanadium
- MSD (Lab ID: 304156)
 - Chromium
 - Vanadium

R1: RPD value was outside control limits.

- MSD (Lab ID: 304156)
 - Arsenic
 - Chromium
 - Lead
 - Vanadium



St. Rose, LA 70087 (504)469-0333



PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 6020

Description:6020 MET ICPMSClient:BBL Caribe / Arcadis PRDate:February 14, 2017

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72614

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MS (Lab ID: 304167)Vanadium, Dissolved

• MSD (Lab ID: 304168)

· Vanadium, Dissolved

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 7470
Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72748

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

(504)469-0333



PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

15 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 72642

C9: Common Laboratory Contaminant.

- MW-17B (Lab ID: 2048968006)
 - Acetone
- MW-84A (Lab ID: 2048968005)
 - Acetone
- TB-011817 (Lab ID: 2048968001)
 - Acetone
- TB-011917 (Lab ID: 2048968008)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Sample: TB-011817	Lab ID: 204	8968001	Collected: 01/18/	17 00:00	Received: 01/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	015/8021				
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1	01/25/17 20:4	6	
4-Bromofluorobenzene (S)	103	%.	44-148	1	01/25/17 20:4	6 460-00-4	
3260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260				
Acetone	18.5	ug/L	4.0	1	01/20/17 14:4	6 67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/20/17 14:4	6 71-43-2	
Bromodichloromethane	0.50	ug/L	0.50	1	01/20/17 14:4	6 75-27-4	
Bromoform	ND	ug/L	0.50	1	01/20/17 14:4	6 75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/20/17 14:4	6 74-83-9	
P-Butanone (MEK)	ND	ug/L	2.0	1	01/20/17 14:4	6 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 14:4	6 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 14:4		
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 14:4	5 108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/20/17 14:4		
Chloroform	2.4	ug/L	0.50	1	01/20/17 14:4		
Chloromethane	ND	ug/L	0.50	1	01/20/17 14:4		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 14:4		
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 14:4		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 14:4	-	
Dichlorodifluoromethane	ND ND	ug/L ug/L	1.0	1	01/20/17 14:4		
,1-Dichloroethane	ND ND	ug/L ug/L	0.50	1	01/20/17 14:4		
,2-Dichloroethane	ND ND	-	0.50	1	01/20/17 14:4		
•		ug/L		1			
,1-Dichloroethene	ND ND	ug/L	0.50 1.0	1	01/20/17 14:4 01/20/17 14:4		
is-1,2-Dichloroethene		ug/L					
rans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/20/17 14:4		
,2-Dichloropropane	ND	ug/L	0.50	1	01/20/17 14:4		
is-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 14:4		
ans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 14:4		
thylbenzene	ND	ug/L	0.50	1	01/20/17 14:4		
2-Hexanone	ND	ug/L	1.0	1	01/20/17 14:4		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 14:4		
Methyl acetate	ND	ug/L	2.0	1	01/20/17 14:4		
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 14:4		
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 14:4		
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/20/17 14:4		
Styrene	ND	ug/L	1.0	1	01/20/17 14:4		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 14:4	6 79-34-5	
etrachloroethene	ND	ug/L	0.50	1	01/20/17 14:4	6 127-18-4	
oluene	ND	ug/L	0.50	1	01/20/17 14:4	6 108-88-3	
,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 14:4	6 71-55-6	
,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 14:4	6 79-00-5	
richloroethene	ND	ug/L	0.50	1	01/20/17 14:4	6 79-01-6	
richlorofluoromethane	ND	ug/L	0.50	1	01/20/17 14:4	6 75-69-4	
inyl chloride	ND	ug/L	0.50	1	01/20/17 14:4		
n&p-Xylene	ND	ug/L	2.0	1		6 179601-23-1	
-Xylene	ND	ug/L	1.0	1	01/20/17 14:4		



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: TB-011817	Lab ID: 204	8968001	Collected: 01/18/1	7 00:00	Received: 0	1/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	93	%.	72-126	1		01/20/17 14:46		
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 14:46		
oluene-d8 (S)	106	%.	79-119	1		01/20/17 14:46	6 2037-26-5	
Sample: EB-011817	Lab ID: 204	8968002	Collected: 01/18/1	7 09:22	Received: 0	1/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 11:58	3	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		02/02/17 11:58		
n-Pentacosane (S)	51	%.	16-137	1	01/24/17 12:12	02/02/17 11:58	3 629-99-2	
p-Terphenyl (S)	57	%.	10-121	1		02/02/17 11:58		
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/25/17 21:13	3	
I-Bromofluorobenzene (S)	100	%.	44-148	1		01/25/17 21:13	3 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32	2 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32	2 7440-47-3	
_ead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32	2 7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:32	2 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37	7 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37	7 7440-47-3	
∟ead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37	7 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:37	7 7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
<i>Mercury</i>	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:0	1 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:12	2 7439-97-6	
270 MSSV PAH by SIM SEP	-	nod: EPA 82	270 by SIM Preparati					
Acenaphthene	ND	ug/L	0.10	1		01/31/17 13:54		
Acenaphthylene	ND	ug/L	0.10	1		01/31/17 13:54		
Anthracene	ND	ug/L	0.10	1		01/31/17 13:54		
Benzo(a)anthracene	ND	ug/L	0.10	1		01/31/17 13:54		
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	4 50-32-8	



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Sample: EB-011817	Lab ID: 204	8968002	Collected: 01/18/1	17 09:22	Received: 01	/19/17 15:39 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparati	ion Meth	nod: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	25-150	1	01/25/17 09:39	01/31/17 13:54	321-60-8	
Геrphenyl-d14 (S)	78	%.	25-150	1	01/25/17 09:39	01/31/17 13:54	1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Acetone	ND	ug/L	4.0	1		01/20/17 15:04	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 15:04	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 15:04	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 15:04	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 15:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 15:04	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 15:04	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 15:04	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 15:04	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 15:04	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 15:04		
Chloromethane	ND	ug/L	0.50	1		01/20/17 15:04	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 15:04	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 15:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 15:04		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 15:04		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:04		
I,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:04		
I,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:04		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 15:04		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:04		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 15:04		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:04		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:04		
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 15:04		
2-Hexanone	ND	ug/L	1.0	1		01/20/17 15:04		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 15:04		
Methyl acetate	ND	ug/L	2.0	1		01/20/17 15:04		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 15:04		
· · , -·····-·		~ _ _	5.50	•		01/20/17 15:04	-	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: EB-011817	Lab ID: 204	18968002	Collected: 01/18/1	7 09:22	Received: 01	/19/17 15:39 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 15:04	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 15:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 15:04	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 15:04	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 15:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:04	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 15:04		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 15:04		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 15:04		
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 15:04		
o-Xylene	ND	ug/L	1.0	1		01/20/17 15:04		
Surrogates	ND	ug/L	1.0	'		01/20/17 10:04	33 47 0	
Dibromofluoromethane (S)	94	%.	72-126	1		01/20/17 15:04	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 15:04		
Toluene-d8 (S)	106	%.	79-119	1		01/20/17 15:04		
10.00.10 00 (0)		70.		·		0.7207	200. 20 0	
Sample: MW-38A	Lab ID: 204	18968003	Collected: 01/18/1	7 11:16	Received: 01	/19/17 15:39 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 80	O15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 12:26	i	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		02/02/17 12:26		
Surrogates	ND	mg/L	1.0	•	01/24/11 12:12	02/02/17 12:20		
n-Pentacosane (S)	39	%.	16-137	1	01/24/17 12:12	02/02/17 12:26	629-99-2	
o-Terphenyl (S)	44	%.	10-121	1		02/02/17 12:26		
	Analytical Met			•	01/21/17 12:12	02/02/11 12:20	01101	
8021 GCV BTEX, MTBE, GRO						04/05/47 04 40		
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/25/17 21:40		
4-Bromofluorobenzene (S)	101	%.	44-148	1		01/25/17 21:40	460-00-4	
					2010			
6020 MET ICPMS	Analytical Met	hod: EPA 60	020 Preparation Meth	nod: EPA	3010			
6020 MET ICPMS Arsenic	Analytical Met ND	hod: EPA 60 mg/L	020 Preparation Meth 0.0010		01/24/17 08:30	02/12/17 16:44	7440-38-2	
	•		·		01/24/17 08:30	02/12/17 16:44 02/12/17 16:44		
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30 01/24/17 08:30		7440-47-3	
Arsenic Chromium	ND ND	mg/L mg/L	0.0010 0.0010	1	01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	02/12/17 16:44	7440-47-3 7439-92-1	
Arsenic Chromium Lead	ND ND 0.0014 0.0070	mg/L mg/L mg/L mg/L	0.0010 0.0010 0.0010	1 1 1	01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	02/12/17 16:44 02/12/17 16:44	7440-47-3 7439-92-1	
Arsenic Chromium Lead Vanadium	ND ND 0.0014 0.0070	mg/L mg/L mg/L mg/L	0.0010 0.0010 0.0010 0.0050	1 1 1	01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 3005A	02/12/17 16:44 02/12/17 16:44	7440-47-3 7439-92-1 7440-62-2	
Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	ND ND 0.0014 0.0070 Analytical Met	mg/L mg/L mg/L mg/L hod: EPA 60 ug/L	0.0010 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 1 nod: EPA	01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 3005A 01/24/17 09:53	02/12/17 16:44 02/12/17 16:44 02/12/17 16:44 02/12/17 19:41	7440-47-3 7439-92-1 7440-62-2 7440-38-2	
Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	ND ND 0.0014 0.0070 Analytical Met	mg/L mg/L mg/L mg/L	0.0010 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 1 nod: EPA	01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 3005A 01/24/17 09:53 01/24/17 09:53	02/12/17 16:44 02/12/17 16:44 02/12/17 16:44	7440-47-3 7439-92-1 7440-62-2 7440-38-2 7440-47-3	



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Sample: MW-38A	Lab ID: 204	8968003	Collected: 01/18/1	7 11:16	Received: 01	/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:03	3 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:15	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	1 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	1 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1		01/31/17 14:14		
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39			
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/31/17 14:14		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/31/17 14:14		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/31/17 14:14	_	
Chrysene	ND ND	-	0.10	1		01/31/17 14:14		
-		ug/L						
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39			
luoranthene	ND	ug/L	0.10	1		01/31/17 14:14		
luorene	ND	ug/L	0.10	1		01/31/17 14:14		
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/31/17 14:14		
-Methylnaphthalene	ND	ug/L	0.10	1		01/31/17 14:14		
laphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	1 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	1 85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	129-00-0	
Surrogates								
?-Fluorobiphenyl (S)	78	%.	25-150	1	01/25/17 09:39	01/31/17 14:14	321-60-8	
erphenyl-d14 (S)	78	%.	25-150	1	01/25/17 09:39	01/31/17 14:14	1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	ND	ug/L	4.0	1		01/20/17 15:23		
Benzene	ND	ug/L	0.50	1		01/20/17 15:23	3 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 15:23		
Bromoform	ND	ug/L	0.50	1		01/20/17 15:23	3 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 15:23	3 74-83-9	
-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 15:23	3 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 15:23		
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 15:23		
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 15:23		
Chloroethane	ND	ug/L	0.50	1		01/20/17 15:23		
Chloroform	0.62	ug/L	0.50	1		01/20/17 15:23		
Chloromethane	ND	ug/L	0.50	1		01/20/17 15:23		
,2-Dibromo-3-chloropropane	ND ND	•	0.20	1		01/20/17 15:23		
,z-bibromo-s-chioropropane Dibromochloromethane		ug/L				01/20/17 15:23		
	ND	ug/L	0.50	1				
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 15:23		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 15:23		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:23		
,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:23	3 107-06-2	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-38A	Lab ID: 204	8968003	Collected: 01/18/1	17 11:16	Received: 01	1/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 15:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 15:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:23	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 15:23	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 15:23	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 15:23	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 15:23	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 15:23		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 15:23		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 15:23		
Styrene	ND	ug/L	1.0	1		01/20/17 15:23		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 15:23		
Tetrachloroethene	ND ND	ug/L	0.50	1		01/20/17 15:23		
Toluene	ND ND	ug/L ug/L	0.50	1		01/20/17 15:23	_	
1,1,1-Trichloroethane	ND ND	-	0.50	1		01/20/17 15:23		
1,1,2-Trichloroethane		ug/L						
· ·	ND	ug/L	0.50	1		01/20/17 15:23		
Trichloroethene	ND	ug/L	0.50	1		01/20/17 15:23		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 15:23		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 15:23		
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 15:23		
o-Xylene	ND	ug/L	1.0	1		01/20/17 15:23	95-47-6	
Surrogates	0.5	0.4	70.400			04/00/47 45 00	4000 50 7	
Dibromofluoromethane (S)	95	%.	72-126	1		01/20/17 15:23		
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/20/17 15:23		
Toluene-d8 (S)	106	%.	79-119	1		01/20/17 15:23	3 2037-26-5	
Sample: MW-84B2	Lab ID: 204	8968004	Collected: 01/18/1	17 12:31	Received: 01	1/19/17 15:39 !	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	O15B Modified Prepa	ration M	lethod: EPA 3535	 5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 12:55	;	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		02/02/17 12:55		
Surrogates								
n-Pentacosane (S)	68	%.	16-137	1		02/02/17 12:55		
o-Terphenyl (S)	62	%.	10-121	1	01/24/17 12:12	02/02/17 12:55	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/25/17 22:07	,	
Surrogates	404	0/	44.440	4		04/05/47 00 03	460.00.4	
4-Bromofluorobenzene (S)	101	%.	44-148	1		01/25/17 22:07	460-00-4	



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Pace Project No.: 2048968								
Sample: MW-84B2	Lab ID: 204	8968004	Collected: 01/18/1	7 12:31	Received: 01	/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	A 3010			
Arsenic	0.0026	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:48	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:48	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:48	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:48	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	1.3	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:53	3 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:53	3 7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:53	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:53	7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:10	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	٦ 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:17	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1		01/31/17 14:34		
Naphthalene	ND	ug/L	0.10	1		01/31/17 14:34		
Phenanthrene	ND	ug/L	0.10	1		01/31/17 14:34		
Pyrene	ND	ug/L	0.10	1		01/31/17 14:34		
Surrogates	70	0/	05 450	4	01/05/17 00:00	04/24/47 44-04	224 60 0	
2-Fluorobiphenyl (S) Terphenyl-d14 (S)	70 71	%. %.	25-150 25-150	1 1		01/31/17 14:34 01/31/17 14:34		
. , ,				'	01/25/11 05.55	01/01/17 14.04	1710-01-0	
8260 MSV Low Level	Analytical Meth							
Acetone	ND	ug/L	4.0	1		01/20/17 15:41		
Benzene	ND	ug/L	0.50	1		01/20/17 15:41		
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 15:41	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 15:41	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 15:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 15:41	78-93-3	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-84B2	Lab ID: 204	8968004	Collected: 01/18/1	7 12:31	Received: 01/19/17 15:39	Matrix: Water
Parameters	Results	Units	Report Limit	DF	Prepared Analyzed	d CAS No. Qu
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260			
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 15	:41 75-15-0
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 15	:41 56-23-5
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 15	:41 108-90-7
Chloroethane	ND	ug/L	0.50	1	01/20/17 15	:41 75-00-3
Chloroform	ND	ug/L	0.50	1	01/20/17 15	:41 67-66-3
Chloromethane	ND	ug/L	0.50	1	01/20/17 15	:41 74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 15	:41 96-12-8
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 15	:41 124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 15	:41 106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/20/17 15	:41 75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1	01/20/17 15	:41 75-34-3
,2-Dichloroethane	ND	ug/L	0.50	1		:41 107-06-2
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 15	:41 75-35-4
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/20/17 15	:41 156-59-2
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		:41 156-60-5
,2-Dichloropropane	ND	ug/L	0.50	1		:41 78-87-5
sis-1,3-Dichloropropene	ND	ug/L	0.50	1		:41 10061-01-5
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		:41 10061-02-6
Ethylbenzene	ND	ug/L	0.50	1		:41 100-41-4
2-Hexanone	ND	ug/L	1.0	1		:41 591-78-6
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		:41 98-82-8
Methyl acetate	ND	ug/L	2.0	1		:41 79-20-9
Methylene Chloride	ND	ug/L	0.50	1		:41 75-09-2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		:41 108-10-1
Methyl-tert-butyl ether	ND	ug/L	0.50	1		:41 1634-04-4
Styrene	ND	ug/L	1.0	1		:41 100-42-5
,1,2,2-Tetrachloroethane	ND ND	ug/L	0.50	1		:41 79-34-5
etrachloroethene	ND	ug/L	0.50	1		:41 127-18-4
oluene	ND ND	ug/L	0.50	1		:41 108-88-3
,1,1-Trichloroethane	ND ND	ug/L	0.50	1		:41 71-55-6
1,1,2-Trichloroethane	ND ND	ug/L ug/L	0.50	1		:41 79-00-5
richloroethene	ND ND	ug/L ug/L	0.50	1		:41 79-00-5 :41 79-01-6
richlorofluoromethane	ND ND	ug/L ug/L	0.50	1		:41 79-01-6 :41 75-69-4
/inyl chloride	ND ND	ug/L ug/L	0.50	1		:41 75-09-4
•	ND ND	J	2.0	1		:41
n&p-Xylene	ND ND	ug/L	2.0 1.0	1		
o-Xylene Surrogates	ND	ug/L	1.0	I	01/20/17 15	:41 95-47-6
Dibromofluoromethane (S)	96	%.	72-126	1	01/20/17 15	:41 1868-53-7
I-Bromofluorobenzene (S)	98	%. %.	68-124	1		:41 460-00-4
` '	105	%. %.	79-119	1		:41 2037-26-5
Toluene-d8 (S)	105	%.	79-119	ı	01/20/17 15	.41 2037-20-3



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Sample: MW-84A	Lab ID: 204	8968005	Collected: 01/18/1	7 13:23	Received: 01	/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 13:23	3	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 13:23	3	
n-Pentacosane (S)	37	%.	16-137	1	01/24/17 12:12	02/02/17 13:23	8 629-99-2	
p-Terphenyl (S)	38	%.	10-121	1	01/24/17 12:12	02/02/17 13:23	84-15-1	
3021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/25/17 23:30)	
4-Bromofluorobenzene (S)	102	%.	44-148	1		01/25/17 23:30	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	3010			
Arsenic	0.012	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:52	2 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:52	2 7440-47-3	
_ead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:52	2 7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/24/17 08:30			
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	•	020 Preparation Meth	nod: EPA	3005A			
•	•		·			00/40/47 40-5	7 7440 00 0	
Arsenic, Dissolved	10.7	ug/L	1.0	1	01/24/17 09:53			
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53			
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53			
/anadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:57	7 7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:12	2 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:24	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	3 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	3 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	3 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	3 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39			
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39			
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39			
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39			
	ND ND	ug/L	0.10	1	01/25/17 09:39			
	שוו	ug/∟	0.10	1	01/23/11 03.39	01/01/11 10.13	, 190-09 - 0	
* * * * * * * * * * * * * * * * * * * *	ND	ua/l	0.40	1	01/25/17 00:20	01/21/17 15:13	Q1_57 G	
Indeno(1,2,3-cd)pyrene 2-Methylnaphthalene Naphthalene	ND ND	ug/L ug/L	0.10 0.10	1 1	01/25/17 09:39 01/25/17 09:39			



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Sample: MW-84A	Lab ID: 204	8968005	Collected: 01/18/1	7 13:23	Received: 01	/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	nod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	82	%.	25-150	1		01/31/17 15:13		
Terphenyl-d14 (S)	87	%.	25-150	1	01/25/17 09:39	01/31/17 15:13	3 1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	50.9	ug/L	4.0	1		01/20/17 15:59	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/20/17 15:59	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 15:59	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 15:59	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 15:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 15:59		
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 15:59		
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 15:59		
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 15:59		
Chloroethane	ND	ug/L	0.50	1		01/20/17 15:59		
Chloroform	ND	ug/L	0.50	1		01/20/17 15:59		
Chloromethane	ND	ug/L	0.50	1		01/20/17 15:59		
1,2-Dibromo-3-chloropropane	ND ND	ug/L ug/L	0.20	1		01/20/17 15:59		
Dibromochloromethane	ND ND	-	0.20	1		01/20/17 15:59		
		ug/L						
I,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 15:59		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 15:59		
,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:59		
,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:59		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:59		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 15:59		
rans-1,2-Dichloroethene	0.62	ug/L	0.50	1		01/20/17 15:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 15:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:59	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:59	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 15:59	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 15:59	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 15:59	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 15:59	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 15:59	75-09-2	
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 15:59		
Methyl-tert-butyl ether	3.3	ug/L	0.50	1		01/20/17 15:59		
Styrene	ND	ug/L	1.0	1		01/20/17 15:59		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 15:59		
etrachloroethene	ND	ug/L	0.50	1		01/20/17 15:59		
oluene	ND	ug/L	0.50	1		01/20/17 15:59		
,1,1-Trichloroethane	ND ND	•	0.50	1		01/20/17 15:59		
• •		ug/L						
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:59		
Frichloroethene	ND	ug/L	0.50	1		01/20/17 15:59		
Frichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 15:59		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 15:59		
n&p-Xylene	ND	ug/L	2.0	1		01/20/17 15:59	179601-23-1	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-84A	Lab ID: 204	8968005	Collected: 01/18/1	7 13:23	Received: 0	1/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		01/20/17 15:59	9 95-47-6	
Dibromofluoromethane (S)	95	%.	72-126	1		01/20/17 15:59	9 1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 15:59		
Toluene-d8 (S)	105	%.	79-119	1		01/20/17 15:59		
Sample: MW-17B	Lab ID: 204	8968006	Collected: 01/18/1	7 15:23	Received: 0	1/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	- Analytical Met	hod: FPA 8	015B Modified Prepa	ration M	lethod: FPA 353	 15		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1		2 02/02/17 13:5 ⁵	1	
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	•	7 02/06/17 13:1:	•	H2
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		2 02/02/17 13:5		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		7 02/06/17 13:1:		H2
Surrogates								
n-Pentacosane (S)	21	%.	16-137	1	02/06/17 08:47	7 02/06/17 13:1:	3 629-99-2	1b
n-Pentacosane (S)	11	%.	16-137	1		2 02/02/17 13:5		1b,S2
o-Terphenyl (S)	32	%.	10-121	1		2 02/02/17 13:5		
o-Terphenyl (S)	36	%.	10-121	1	02/06/17 08:47	7 02/06/17 13:1:	3 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics <i>Surrogates</i>	ND	ug/L	50.0	1		01/25/17 23:5	7	
4-Bromofluorobenzene (S)	102	%.	44-148	1		01/25/17 23:5	7 460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation Meth	nod: EP/	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:50	6 7440-38-2	
Chromium	0.093	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:50	6 7440-47-3	
Lead	0.010	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:50	6 7439-92-1	
Vanadium	0.24	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:50	6 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation Meth	nod: EP/	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	3 02/12/17 20:0	1 7440-38-2	
Chromium, Dissolved	1.3	ug/L	1.0	1	01/24/17 09:53	3 02/12/17 20:0	1 7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	3 02/12/17 20:0	1 7439-92-1	
Vanadium, Dissolved	44.0	ug/L	5.0	1	01/24/17 09:53	3 02/12/17 20:0	1 7440-62-2	
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Meth	nod: EP/	A 7470			
Mercury	0.45	ug/L	0.20	1	01/24/17 08:59	9 01/24/17 17:14	4 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Meth	nod: EP/	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:20	6 7439-97-6	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-17B	Lab ID: 204	18968006	Collected: 01/18/1	7 15:23	Received: 01	/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	3 129-00-0	
Surrogates		•						
?-Fluorobiphenyl (S)	59	%.	25-150	1	01/25/17 09:39	01/31/17 15:33	3 321-60-8	
Terphenyl-d14 (S)	62	%.	25-150	1	01/25/17 09:39	01/31/17 15:33	3 1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	6.3	ug/L	4.0	1		01/20/17 16:17	7 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/20/17 16:17		
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 16:17	7 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 16:17	7 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 16:17	7 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 16:17	7 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 16:17		
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 16:17		
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 16:17		
Chloroethane	ND	ug/L	0.50	1		01/20/17 16:17		
Chloroform	ND	ug/L	0.50	1		01/20/17 16:17		
Chloromethane	ND	ug/L	0.50	1		01/20/17 16:17		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 16:17	7 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 16:17	7 124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 16:17		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 16:17	7 75-71-8	
,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:17		
,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:17		
,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:17		
sis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 16:17		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:17	7 156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:17	7 78-87-5	
sis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:17	7 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:17	7 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:17	7 100 11 1	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-17B	Lab ID: 204	3968006	Collected: 01/18/1	7 15:23	Received: 0	1/19/17 15:39 M	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
2-Hexanone	ND	ug/L	1.0	1		01/20/17 16:17	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 16:17	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 16:17	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 16:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 16:17	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 16:17	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 16:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 16:17	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 16:17	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 16:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:17		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:17		
Trichloroethene	ND	ug/L	0.50	1		01/20/17 16:17		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 16:17		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 16:17		
m&p-Xylene	ND ND	ug/L	2.0	1		01/20/17 16:17		
o-Xylene	ND ND	ug/L ug/L	1.0	1		01/20/17 16:17		
Surrogates	ND	ug/L	1.0	'		01/20/17 10.17	93-47-0	
Dibromofluoromethane (S)	94	%.	72-126	1		01/20/17 16:17	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/20/17 16:17		
Toluene-d8 (S)	104	%. %.	79-119	1		01/20/17 16:17		
Sample: FB-011817	Lab ID: 204	3968007	Collected: 01/18/1	7 15:24	Received: 0	1/19/17 15:39 M	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO						•	-	
	Analytical Meth	od: EPA 80	015/8021					
	Analytical Metr	nod: EPA 80 ug/L	50.0	1		01/26/17 00:24		
Surrogates				1		01/26/17 00:24 01/26/17 00:24	460-00-4	
Surrogates	ND	ug/L %.	50.0 44-148				460-00-4	
Surrogates 4-Bromofluorobenzene (S)	ND 100 Analytical Meth	ug/L %. nod: EPA 50	50.0 44-148					
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone	ND 100 Analytical Meth ND	ug/L %. nod: EPA 50 ug/L	50.0 44-148 030B/8260 4.0	1		01/26/17 00:24	67-64-1	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene	ND 100 Analytical Meth ND ND	ug/L %. nod: EPA 50 ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50	1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane	ND 100 Analytical Meth ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50	1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform	ND 100 Analytical Meth ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50	1 1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4 75-25-2	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane	ND 100 Analytical Meth ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50	1 1 1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK)	ND 100 Analytical Meth ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0	1 1 1 1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide	ND 100 Analytical Meth ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0	1 1 1 1 1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride	ND 100 Analytical Meth ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0	1 1 1 1 1 1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene	ND 100 Analytical Meth ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50	1 1 1 1 1 1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane	ND 100 Analytical Meth ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform	ND 100 Analytical Meth ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3	
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane	ND 100 Analytical Meth ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform	ND 100 Analytical Meth ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1		01/26/17 00:24 01/20/17 16:35 01/20/17 16:35	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: FB-011817	Lab ID: 204	8968007	Collected: 01/18/1	7 15:24	Received: (01/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 16:3	5 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 16:3	5 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:3	5 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:3	5 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:3	5 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 16:3	5 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:3	5 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:3	5 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:3	5 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:3	5 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:3	5 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 16:3	5 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 16:3	5 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 16:3		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 16:3		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 16:3		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 16:3		
Styrene	ND	ug/L	1.0	1		01/20/17 16:3		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 16:3		
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 16:3		
Toluene	ND	ug/L	0.50	1		01/20/17 16:3	-	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:3		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:3		
Trichloroethene	ND	ug/L	0.50	1		01/20/17 16:3		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 16:3		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 16:3		
m&p-Xylene	ND	ug/L ug/L	2.0	1			5	
o-Xylene	ND ND	ug/L ug/L	1.0	1		01/20/17 16:3		
Surrogates	ND	ug/L	1.0	'		01/20/17 10.3	3 93-47-0	
Dibromofluoromethane (S)	97	%.	72-126	1		01/20/17 16:3	5 1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/20/17 16:3		
Toluene-d8 (S)	104	%.	79-119	1		01/20/17 16:3		
Sample: TB-011917	Lab ID: 204	8968008	Collected: 01/19/1	7 00:00	Received: (01/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	 015/8021				-	
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 00:5	1	
Surrogates 4-Bromofluorobenzene (S)	103	%.	44-148	1		01/26/17 00:5	1 460-00-4	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	15.8	ug/L	4.0	1		01/20/17 16:5	3 67-64-1	C9
		-						
Benzene	ND	ug/L	0.50	1		01/20/17 16:5	3 71-43-2	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: TB-011917	Lab ID: 204	8968008	Collected: 01/19/1	17 00:00	Received:	01/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Bromoform	ND	ug/L	0.50	1		01/20/17 16:53	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 16:53	3 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 16:53	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 16:53	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 16:53	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 16:53	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 16:53	3 75-00-3	
Chloroform	2.5	ug/L	0.50	1		01/20/17 16:53	8 67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 16:53	3 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 16:53	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 16:53	3 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 16:53	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 16:53	3 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:53	3 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:53		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 16:53	3 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:53		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:53		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:53	3 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:53		
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:53		
2-Hexanone	ND	ug/L	1.0	1		01/20/17 16:53		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 16:53		
Methyl acetate	ND	ug/L	2.0	1		01/20/17 16:53		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 16:53		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 16:53		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 16:53		
Styrene	ND	ug/L	1.0	1		01/20/17 16:53		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 16:53		
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 16:53		
Toluene	ND	ug/L	0.50	1		01/20/17 16:53		
I,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:53		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:53		
Frichloroethene	ND	ug/L	0.50	1		01/20/17 16:53		
Trichloroetherie	ND	ug/L	0.50	1		01/20/17 16:53		
/inyl chloride	ND ND	ug/L ug/L	0.50	1		01/20/17 16:53		
m&p-Xylene	ND ND	ug/L ug/L	2.0	1		01/20/17 16:53		
o-Xylene	ND ND	ug/L ug/L	1.0	1		01/20/17 16:53		
Surrogates	ND	ug/L	1.0	ı		01/20/17 10.50	33-47-0	
Dibromofluoromethane (S)	95	%.	72-126	1		01/20/17 16:53	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 16:53		
Toluene-d8 (S)	105	%.	79-119	1		01/20/17 16:53		



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Sample: EB-011917	Lab ID: 20	48968009	Collected: 01/19/1	17 10:00	Received: 01	/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3015M DRO/ORO Organics	Analytical Me	ethod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 14:19	9	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 14:19)	
n-Pentacosane (S)	27	%.	16-137	1	01/24/17 12:12	02/02/17 14:19	9 629-99-2	
o-Terphenyl (S)	38	%.	10-121	1	01/24/17 12:12	02/02/17 14:19	84-15-1	
3021 GCV BTEX, MTBE, GRO	Analytical Me	ethod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/26/17 01:18	3	
4-Bromofluorobenzene (S)	102	%.	44-148	1		01/26/17 01:18	3 460-00-4	
6020 MET ICPMS	Analytical Me	ethod: EPA 60	020 Preparation Met	hod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7440-47-3	
_ead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:00	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Me	thod: EPA 60	020 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:05	5 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53			
_ead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53			
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53			
7470 Mercury	Analytical Me	thod: EPA 74	170 Preparation Met	hod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:16	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Me	thod: EPA 74	170 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:28	3 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Me	thod: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	3 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	3 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	3 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	3 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	3 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39			
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39			
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39			
Fluorene	ND ND	ug/L ug/L	0.10	1	01/25/17 09:39			
ndeno(1,2,3-cd)pyrene	ND ND	ug/L ug/L	0.10	1	01/25/17 09:39			
ndeno(1,2,3-cd)pyrene 2-Methylnaphthalene	ND ND	ug/L ug/L	0.10	1	01/25/17 09:39			
L-IVICUIYIIIAPIIUIAICIIE	טאו	ug/L	0.10	1				
Naphthalene	ND	ug/L	0.10	1	01/25/17 00:20	01/31/17 15:53	01 20 2	



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Sample: EB-011917	Lab ID: 204	8968009	Collected: 01/19/1	7 10:00	Received: 01	/19/17 15:39 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
270 MSSV PAH by SIM SEP	Analytical Met	nod: EPA 82	270 by SIM Preparati	ion Meth	nod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%.	25-150	1	01/25/17 09:39	01/31/17 15:53	321-60-8	
Terphenyl-d14 (S)	81	%.	25-150	1	01/25/17 09:39	01/31/17 15:53	1718-51-0	
3260 MSV Low Level	Analytical Met	nod: EPA 50	030B/8260					
Acetone	ND	ug/L	4.0	1		01/20/17 17:11	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 17:11	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 17:11	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 17:11	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 17:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 17:11	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 17:11	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 17:11	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 17:11	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 17:11		
Chloroform	ND	ug/L	0.50	1		01/20/17 17:11		
Chloromethane	ND	ug/L	0.50	1		01/20/17 17:11		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 17:11		
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 17:11		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 17:11		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 17:11		
,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:11		
,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:11		
,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:11		
is-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 17:11		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:11		
,2-Dichloropropane	ND ND	ug/L ug/L	0.50	1		01/20/17 17:11		
	ND ND	•	0.50	1		01/20/17 17:11		
ris-1,3-Dichloropropene	ND ND	ug/L	0.50	1		01/20/17 17:11		
rans-1,3-Dichloropropene	ND ND	ug/L	0.50	1		01/20/17 17:11		
Ethylbenzene E-Hexanone		ug/L		1				
	ND	ug/L	1.0			01/20/17 17:11		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 17:11		
Methyl acetate	ND	ug/L	2.0	1 1		01/20/17 17:11		
Methylene Chloride	ND	ug/L	0.50	•		01/20/17 17:11		
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 17:11		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 17:11		
Styrene	ND	ug/L	1.0	1		01/20/17 17:11		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 17:11		
etrachloroethene	ND	ug/L	0.50	1		01/20/17 17:11		
oluene	ND	ug/L	0.50	1		01/20/17 17:11		
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:11		
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:11		
richloroethene	ND	ug/L	0.50	1		01/20/17 17:11		
richlorofluoromethane	ND	ug/L	0.50	1		01/20/17 17:11	75-69-4	
inyl chloride/	ND	ug/L	0.50	1		01/20/17 17:11	75-01-4	
n&p-Xylene	ND	ug/L	2.0	1		01/20/17 17:11	179601-23-1	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: EB-011917	Lab ID: 2048	8968009	Collected: 01/19/1	7 10:00	Received: 0)1/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
o-Xylene	ND	ug/L	1.0	1		01/20/17 17:1	95-47-6	
Surrogates Dibromofluoromethane (S)	96	%.	72-126	1		01/20/17 17:1	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/20/17 17:1		
Foluene-d8 (S)	104	%.	79-119	1		01/20/17 17:1		
Sample: MW-77B	Lab ID: 204	8968010	Collected: 01/19/1	7 11:17	Received: (01/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
B015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	D15B Modified Prepa	ration M	ethod: EPA 353	 35		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:1	2 02/02/17 14:47	7	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		2 02/02/17 14:47		
n-Pentacosane (S)	17	%.	16-137	1	01/24/17 12:1:	2 02/02/17 14:47	7 629-99-2	
p-Terphenyl (S)	44	%.	10-121	1		2 02/02/17 14:47		
021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/26/17 01:46	6	
4-Bromofluorobenzene (S)	102	%.	44-148	1		01/26/17 01:46	6 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3010			
Arsenic	0.0015	mg/L	0.0010	1	01/24/17 08:3	0 02/12/17 17:04	1 7440-38-2	
Chromium	0.0072	mg/L	0.0010	1	01/24/17 08:3	0 02/12/17 17:04	4 7440-47-3	
_ead	ND	mg/L	0.0010	1	01/24/17 08:3	0 02/12/17 17:04	4 7439-92-1	
Vanadium Vanadium	0.026	mg/L	0.0050	1	01/24/17 08:3	0 02/12/17 17:04	1 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	1.0	ug/L	1.0	1	01/24/17 09:5	3 02/12/17 20:09	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:5	3 02/12/17 20:09	7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:5	3 02/12/17 20:09	7439-92-1	
Vanadium, Dissolved	6.4	ug/L	5.0	1	01/24/17 09:5	3 02/12/17 20:09	7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:5	9 01/24/17 17:18	3 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	470 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:4	9 01/24/17 19:30	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1		9 01/31/17 16:13		
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:3	9 01/31/17 16:13	3 208-96-8	
Anthracene	ND	ug/L	0.10	1		9 01/31/17 16:13		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:3	9 01/31/17 16:13	3 56-55-3	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-77B	Lab ID: 20	048968010	Collected: 01/19/1	7 11:17	Received: 01	/19/17 15:39 N	/latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical M	ethod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	206-44-0	
luorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	193-39-5	
-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39			
laphthalene	ND	ug/L	0.10	1	01/25/17 09:39			
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39			
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39			
Surrogates	140	ug, L	0.10	•	3.720,17 00.00	5.75.7.7. 10.10	.20 00 0	
P-Fluorobiphenyl (S)	66	%.	25-150	1	01/25/17 09:39	01/31/17 16:13	321-60-8	
erphenyl-d14 (S)	76	%.	25-150	1	01/25/17 09:39			
260 MSV Low Level		ethod: EPA 50						
				4		04/00/47 47 00	07.04.4	
acetone	ND	ug/L	4.0	1		01/20/17 17:30		
enzene	ND	ug/L	0.50	1		01/20/17 17:30	-	
romodichloromethane	ND	ug/L	0.50	1		01/20/17 17:30		
romoform	ND	ug/L	0.50	1		01/20/17 17:30		
romomethane	ND	ug/L	0.50	1		01/20/17 17:30		
-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 17:30		
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 17:30		
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 17:30		
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 17:30		
Chloroethane	ND	ug/L	0.50	1		01/20/17 17:30		
Chloroform	ND	ug/L	0.50	1		01/20/17 17:30		
Chloromethane	ND	ug/L	0.50	1		01/20/17 17:30	74-87-3	
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 17:30	96-12-8	
Pibromochloromethane	ND	ug/L	0.50	1		01/20/17 17:30	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 17:30	106-93-4	
ichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 17:30	75-71-8	
,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:30	75-34-3	
,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:30	107-06-2	
,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:30	75-35-4	
is-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 17:30	156-59-2	
ans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:30	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 17:30	78-87-5	
is-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:30	10061-01-5	
ans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:30	10061-02-6	
thylbenzene	ND	ug/L	0.50	1		01/20/17 17:30		
-Hexanone	ND	ug/L	1.0	1		01/20/17 17:30		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 17:30		
Methyl acetate	ND	ug/L	2.0	1		01/20/17 17:30		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 17:30		



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-77B	Lab ID: 2048	3968010	Collected: 01/19/1	7 11:17	Received: 01	/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 17:30	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 17:30	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 17:30	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 17:30	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 17:30	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 17:30	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:30	71-55-6	
I,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:30	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 17:30		
Frichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 17:30		
/inyl chloride	ND	ug/L	0.50	1		01/20/17 17:30		
m&p-Xylene	ND ND	ug/L ug/L	2.0	1		01/20/17 17:30		
o-Xylene	ND ND	•	1.0	1		01/20/17 17:30		
Surrogates	טאו	ug/L	1.0	'		01/20/11 17:30	33-41-0	
Dibromofluoromethane (S)	95	%.	72-126	1		01/20/17 17:30	1969 52 7	
1-Bromofluorobenzene (S)	98	%.	68-124	1		01/20/17 17:30		
	105	%. %.	79-119	1		01/20/17 17:30		
Toluene-d8 (S)	105	70.	79-119	'		01/20/17 17.30	2037-20-3	
Sample: MW-20B	Lab ID: 204	3968011	Collected: 01/19/1	7 12:25	Received: 01	/19/17 15:39 I	Matrix: Water	
Sample: MW-20B Parameters	Lab ID: 204	3968011 Units	Collected: 01/19/1	7 12:25 DF	Received: 01 Prepared	/19/17 15:39 I Analyzed	Matrix: Water CAS No.	Qua
Parameters	Results	Units		DF	Prepared	Analyzed		Qua
Parameters 3015M DRO/ORO Organics	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Parameters B015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40)	Results Analytical Meth	Units	Report Limit	DF ration M	Prepared ethod: EPA 3535	Analyzed 02/02/17 15:16	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates	Results Analytical Meth	Units nod: EPA 80 mg/L	Report Limit	DF ration M	Prepared lethod: EPA 3535 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16	CAS No.	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S)	Results Analytical Meth ND ND	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF ration M 1 1	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16	CAS No.	Qua
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S)	Results Analytical Methods ND ND 47	Units od: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	Results Analytical Method ND ND 47 54	Units od: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	Analytical Method ND ND 47 54 Analytical Method	Units nod: EPA 80 mg/L mg/L %. %. hod: EPA 80	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021	DF ration M 1 1 1	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) 8027 Surrogates 1-Pentacosane (S) 1-Pentacosane (S) 1-Bromofluorobenzene (S) 8021 GCV BTEX, MTBE, GRO 8036 Gasoline Range Organics 8047 Surrogates 1-Bromofluorobenzene (S)	Results Analytical Method ND ND 47 54 Analytical Method ND 98	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0	DF ration M 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16	CAS No.	Qua
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) 3021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 5020 MET ICPMS	Results Analytical Method ND ND 47 54 Analytical Method ND 98	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148	DF ration M 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12	CAS No. 6 629-99-2 6 84-15-1	Qua
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 2-Terphenyl (S) 3021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 3020 MET ICPMS Arsenic	Results Analytical Method ND ND 47 54 Analytical Method ND 98 Analytical Method	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth	DF ration M 1 1 1 1 1 1 nod: EPA	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 02:12 01/26/17 02:12	CAS No. 6 629-99-2 6 84-15-1 7440-38-2	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 8020 MET ICPMS Arsenic Chromium	Results Analytical Method ND ND 47 54 Analytical Method ND 98 Analytical Method ND	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L	Report Limit	DF ration M 1 1 1 1 1 1 nod: EPA	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 02/12/17 17:08 02/12/17 17:08	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates I-Pentacosane (S) I-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates I-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium Lead	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND 0.0040	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3 7439-92-1	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Dissoline Range Organics Dis	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND 0.0040 ND ND	Units mg/L mg/L %. wo. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3 7439-92-1	Qu
Parameters Bo15M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) Bo21 GCV BTEX, MTBE, GRO Basoline Range Organics Surrogates D-Bromofluorobenzene (S) Bo20 MET ICPMS Arsenic Chromium Lead Janadium Bo20 MET ICPMS, Dissolved (LF)	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND 0.0040 ND ND	Units mg/L mg/L %. wo. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0010 0.0050	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 01/26/17 17:08 02/12/17 17:08 02/12/17 17:08	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3 7439-92-1 7440-62-2	Qu
Parameters B015M DRO/ORO Organics Diesel Range Organics (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Basoline Range Organics Surrogates 1-Bromofluorobenzene (S) B020 MET ICPMS Arsenic Chromium Lead Vanadium B020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND 0.0040 ND ND ND Analytical Method	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth	DF ration M 1 1 1 1 1 1 1 1 1 1 nod: EPA	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 01/26/17 17:08 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2	Qua
·	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND 0.0040 ND ND Analytical Method	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L od: EPA 60 ug/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth 1.0	DF ration M 1 1 1 1 1 1 1 1 1 1 nod: EPA 1 1 1 1 1	Prepared lethod: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 4 3010 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 01/26/17 17:08 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08 02/12/17 20:13 02/12/17 20:13	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3 7440-62-2 7440-38-2 7440-38-2 7440-47-3	Qu



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Sample: MW-20B	Lab ID: 204	8968011	Collected: 01/19/1	7 12:25	Received: 01	/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
470 Mercury	Analytical Meth	hod: EPA 7	470 Preparation Meth	od: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:21	7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	hod: EPA 74	470 Preparation Meth	od: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:32	7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	hod: EPA 82	270 by SIM Preparation	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/31/17 16:33		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/31/17 16:33		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/31/17 16:33		
Chrysene	ND	ug/L	0.10	1		01/31/17 16:33		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39			
luoranthene	ND	ug/L	0.10	1		01/31/17 16:33		
luorene	ND ND	•	0.10	1		01/31/17 16:33		
		ug/L						
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/31/17 16:33		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/31/17 16:33		
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39			
Phenanthrene	ND	ug/L	0.10	1		01/31/17 16:33		
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	129-00-0	
Surrogates	04	0/	05.450		04/05/47 00 00	04/04/47 40 00	004 00 0	
2-Fluorobiphenyl (S)	61	%.	25-150	1		01/31/17 16:33		
erphenyl-d14 (S)	69	%.	25-150	1	01/25/17 09:39	01/31/17 16:33	1/18-51-0	
260 MSV Low Level	Analytical Meth	hod: EPA 50						
Acetone	ND	ug/L	4.0	1		01/20/17 17:48	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 17:48		
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 17:48	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 17:48	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 17:48	74-83-9	
-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 17:48	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 17:48	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 17:48		
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 17:48		
Chloroethane	ND	ug/L	0.50	1		01/20/17 17:48		
Chloroform	ND	ug/L	0.50	1		01/20/17 17:48		
Chloromethane	ND	ug/L	0.50	1		01/20/17 17:48		
	ND	ug/L	0.20	1		01/20/17 17:48		
.2-Dibromo-3-chloropropane	110		0.50	1		01/20/17 17:48		
,2-Dibromo-3-chloropropane	ND	[1/7/1						
Dibromochloromethane	ND ND	ug/L						
Dibromochloromethane ,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 17:48	106-93-4	
		-					106-93-4 75-71-8	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-20B	Lab ID: 204	8968011	Collected: 01/19/1	7 12:25	Received: 01	I/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:48	3 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 17:48	3 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:48	3 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 17:48	3 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:48	3 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:48	3 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 17:48	3 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 17:48	3 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 17:48	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 17:48		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 17:48		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 17:48		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 17:48		
Styrene	ND	ug/L	1.0	1		01/20/17 17:48		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 17:48		
Tetrachloroethene	ND ND	ug/L	0.50	1		01/20/17 17:48		
Toluene	ND ND	ug/L ug/L	0.50	1		01/20/17 17:48	_	
		-		1				
1,1,1-Trichloroethane	ND	ug/L	0.50			01/20/17 17:48		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:48		
Trichloroethene	ND	ug/L	0.50	1		01/20/17 17:48		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 17:48		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 17:48		
m&p-Xylene	ND	ug/L	2.0	1			3 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 17:48	95-47-6	
Surrogates		0.4	70.400			04/00/47 47 46	50 7	
Dibromofluoromethane (S)	96	%.	72-126	1		01/20/17 17:48		
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 17:48		
Toluene-d8 (S)	105	%.	79-119	1		01/20/17 17:48	3 2037-26-5	
Sample: MW-78B	Lab ID: 204	8968012	Collected: 01/19/1	7 13:15	Received: 01	I/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Metl	nod: EPA 80)15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 15:44	1	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		02/02/17 15:44		
Surrogates		ū						
n-Pentacosane (S)	43	%.	16-137	1	01/24/17 12:12	02/02/17 15:44	629-99-2	
o-Terphenyl (S)	45	%.	10-121	1	01/24/17 12:12	02/02/17 15:44	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 02:40)	
Surrogates								
4-Bromofluorobenzene (S)		%.						



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Pace Project No.: 2048968								
Sample: MW-78B	Lab ID: 2048	8968012	Collected: 01/19/1	7 13:15	Received: 01	/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7440-38-2	
Chromium	0.0074	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	2 7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:12	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7440-38-2	
Chromium, Dissolved	7.2	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:17	7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	0.93	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:23	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:35	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	8 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	3 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	3 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	3 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	3 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	3 207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	3 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	3 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	3 206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/31/17 16:53		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/31/17 16:53		
Naphthalene	ND	ug/L	0.10	1		01/31/17 16:53		
Phenanthrene	ND	ug/L	0.10	1		01/31/17 16:53		
Pyrene	ND	ug/L	0.10	1		01/31/17 16:53		
Surrogates	NB	ug/L	0.10	•	01/20/17 00:00	01/01/17 10.00	120 00 0	
2-Fluorobiphenyl (S)	78	%.	25-150	1	01/25/17 09:39	01/31/17 16:53	321-60-8	
Terphenyl-d14 (S)	84	%.	25-150	1		01/31/17 16:53		
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	ND	ug/L	4.0	1		01/20/17 18:06	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 18:06		
Bromodichloromethane	ND ND	ug/L ug/L	0.50	1		01/20/17 18:06		
Bromoform	ND ND	_	0.50	1		01/20/17 18:06		
		ug/L						
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:06		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 18:06	78-93-3	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-78B	Lab ID: 204	8968012	Collected: 01/19/1	7 13:15	Received: (01/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 18:06	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 18:06	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 18:06	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 18:06	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 18:06	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 18:06	3 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 18:06	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 18:06	3 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 18:06	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 18:06	3 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:06		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:06		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 18:06	5 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:06		
,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 18:06		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:06		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:06		
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 18:06		
2-Hexanone	ND	ug/L	1.0	1		01/20/17 18:06		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 18:06		
Methyl acetate	ND	ug/L	2.0	1		01/20/17 18:06		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 18:06		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 18:06		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 18:06		
Styrene	ND	ug/L	1.0	1		01/20/17 18:06		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 18:06		
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 18:06		
Toluene	ND	ug/L	0.50	1		01/20/17 18:06		
I,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:06		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:06		
richloroethene	ND	ug/L	0.50	1		01/20/17 18:06		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 18:06		
/inyl chloride	ND	ug/L	0.50	1		01/20/17 18:06		
n&p-Xylene	ND	ug/L	2.0	1			3 179601-23-1	
o-Xylene	ND ND	ug/L	1.0	1		01/20/17 18:06		
Surrogates	IND	ug/L	1.0	'		01/20/17 10.00	, 55 41-0	
Dibromofluoromethane (S)	96	%.	72-126	1		01/20/17 18:06	1868-53-7	
I-Bromofluorobenzene (S)	97	%.	68-124	1		01/20/17 18:06		
Foluene-d8 (S)	105	%.	79-119	1		01/20/17 18:06		



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-21B	Lab ID: 20	48968013	Collected: 01/19/1	7 13:56	Received: 01	/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
B015M DRO/ORO Organics	Analytical Me	ethod: EPA 80	015B Modified Prepar	ration M	ethod: EPA 3535	i		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 16:12	2	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 16:12	2	
Surrogates								
n-Pentacosane (S)	39	%.	16-137	1	01/24/17 12:12	02/02/17 16:12	2 629-99-2	
o-Terphenyl (S)	39	%.	10-121	1	01/24/17 12:12	02/02/17 16:12	2 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Me	ethod: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 03:07	7	
Surrogates		3						
4-Bromofluorobenzene (S)	102	%.	44-148	1		01/26/17 03:07	7 460-00-4	
6020 MET ICPMS	Analytical Me	ethod: EPA 60	020 Preparation Meth	od: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:16	6 7440-38-2	
Chromium	0.0040	mg/L	0.0010	1	01/24/17 08:30			
Lead	ND	mg/L	0.0010	1	01/24/17 08:30			
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30			
		•				02/12/11 17:10	7 7 7 7 6 6 2 2	
6020 MET ICPMS, Dissolved (LF)	Analytical Me	ethod: EPA 60	020 Preparation Meth	od: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:21	7440-38-2	
Chromium, Dissolved	2.7	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:21	7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:21	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:21	7440-62-2	
7470 Mercury	Analytical Me	ethod: EPA 74	170 Preparation Meth	od: EPA	A 7470			
Mercury	0.27	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:25	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Me	ethod: EPA 74	170 Preparation Meth	od: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:37	7 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Me	thod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	3 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	3 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	3 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	3 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39			
Chrysene	ND ND	ug/L	0.10	1	01/25/17 09:39			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39			
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39			
	ND ND	ug/L	0.10	1	01/25/17 09:39			
		ug/∟	0.10				30101	
Fluorene		-	0.10	1	01/25/17 00:30	01/31/17 17:13	3 193-39-5	
Fluorene Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39			
		-	0.10 0.10 0.10	1 1 1	01/25/17 09:39 01/25/17 09:39 01/25/17 09:39	01/31/17 17:13	91-57-6	



Project: PUMA TERMINAL GW SAMPLING

Date: 02/14/2017 09:10 AM

Sample: MW-21B	Lab ID: 204	8968013	Collected: 01/19/1	7 13:56	Received: 01	I/19/17 15:39 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	25-150	1		01/31/17 17:13		
Terphenyl-d14 (S)	83	%.	25-150	1	01/25/17 09:39	01/31/17 17:13	1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	ND	ug/L	4.0	1		01/20/17 18:24	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 18:24	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 18:24	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 18:24	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 18:24		
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 18:24		
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 18:24		
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 18:24		
Chloroethane	ND	ug/L	0.50	1		01/20/17 18:24		
Chloroform	ND	ug/L	0.50	1		01/20/17 18:24		
Chloromethane	ND ND	-	0.50	1		01/20/17 18:24		
,2-Dibromo-3-chloropropane		ug/L				01/20/17 18:24		
· ' '	ND	ug/L	0.20	1				
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 18:24		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 18:24		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 18:24		
,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:24		
,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:24		
,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:24		
is-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 18:24	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:24	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 18:24	78-87-5	
is-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:24	10061-01-5	
ans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:24	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 18:24	100-41-4	
-Hexanone	ND	ug/L	1.0	1		01/20/17 18:24	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 18:24	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 18:24		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 18:24		
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 18:24		
Nethyl-tert-butyl ether	2.8	ug/L	0.50	1		01/20/17 18:24		
Styrene	ND	ug/L	1.0	1		01/20/17 18:24		
,1,2,2-Tetrachloroethane	ND		0.50	1		01/20/17 18:24		
etrachloroethene	ND ND	ug/L	0.50	1		01/20/17 18:24		
		ug/L				01/20/17 18:24		
oluene	ND	ug/L	0.50	1				
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:24		
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:24		
richloroethene	ND	ug/L	0.50	1		01/20/17 18:24		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 18:24		
/inyl chloride	ND	ug/L	0.50	1		01/20/17 18:24		
n&p-Xylene	ND	ug/L	2.0	1		01/20/17 18:24	179601-23-1	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: MW-21B	Lab ID: 2048	8968013	Collected: 01/19/1	7 13:56	Received: 0	01/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		01/20/17 18:24	4 95-47-6	
Dibromofluoromethane (S)	96	%.	72-126	1		01/20/17 18:24	4 1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/20/17 18:24	4 460-00-4	
Toluene-d8 (S)	105	%.	79-119	1		01/20/17 18:24	4 2037-26-5	
Sample: DUP007	Lab ID: 204	8968014	Collected: 01/19/1	7 00:00	Received: 0	01/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	35		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:1:	2 02/02/17 16:40)	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		2 02/02/17 16:40		
n-Pentacosane (S)	41	%.	16-137	1	01/24/17 12:13	2 02/02/17 16:40	0 629-99-2	
o-Terphenyl (S)	44	%.	10-121	1	01/24/17 12:13	2 02/02/17 16:40	0 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/26/17 03:3	5	
4-Bromofluorobenzene (S)	101	%.	44-148	1		01/26/17 03:3	5 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	0 02/12/17 17:20	7440-38-2	
Chromium	0.0040	mg/L	0.0010	1	01/24/17 08:3	0 02/12/17 17:20	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:3	0 02/12/17 17:20	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:3	0 02/12/17 17:20	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:5	3 02/12/17 20:2	5 7440-38-2	
Chromium, Dissolved	2.8	ug/L	1.0	1	01/24/17 09:5	3 02/12/17 20:2	5 7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1		3 02/12/17 20:2		
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:5	3 02/12/17 20:2	5 7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	0.27	ug/L	0.20	1	01/24/17 08:59	9 01/24/17 17:2	7 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	9 01/24/17 19:39	9 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Meth				
Acenaphthene	ND	ug/L	0.10	1		9 01/31/17 17:3		
Acenaphthylene	ND	ug/L	0.10	1		9 01/31/17 17:3		
Anthracene	ND	ug/L	0.10	1		9 01/31/17 17:3	-	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:3	9 01/31/17 17:3	3 56-55-3	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: DUP007	Lab ID: 20	48968014	Collected: 01/19/1	7 00:00	Received: 01	/19/17 15:39 N	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Me	ethod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/31/17 17:33		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/31/17 17:33		
Naphthalene	ND	ug/L	0.10	1		01/31/17 17:33		
Phenanthrene	ND	ug/L	0.10	1		01/31/17 17:33		
Pyrene	ND ND	ug/L	0.10	1		01/31/17 17:33		
Surrogates	ND	ug/L	0.10	'	01/23/17 09.39	01/31/17 17.33	129-00-0	
2-Fluorobiphenyl (S)	72	%.	25-150	1	01/25/17 09:39	01/31/17 17:33	321-60-8	
Ferphenyl-d14 (S)	74	%.	25-150	1		01/31/17 17:33		
2260 MSV Low Level	Analytical Me				01/20/17 00:00	01/01/11 17:00	1710010	
Acetone	ND	ug/L	4.0	1		01/20/17 18:42		
Benzene	ND	ug/L	0.50	1		01/20/17 18:42	_	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 18:42	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 18:42	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:42	74-83-9	
P-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 18:42	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 18:42	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 18:42	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 18:42	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 18:42	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 18:42	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 18:42	74-87-3	
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 18:42	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 18:42	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 18:42	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 18:42		
.1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:42		
,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:42		
,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:42		
is-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 18:42		
ans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:42		
,2-Dichloropropane	ND ND	ug/L	0.50	1		01/20/17 18:42		
is-1,3-Dichloropropene	ND ND	ug/L ug/L	0.50	1		01/20/17 18:42		
		-						
ans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:42		
thylbenzene	ND	ug/L	0.50	1		01/20/17 18:42		
-Hexanone	ND	ug/L	1.0	1		01/20/17 18:42		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 18:42		
Methyl acetate	ND	ug/L	2.0	1		01/20/17 18:42		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 18:42	75-09-2	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: DUP007	Lab ID: 204	8968014	Collected: 01/19/1	7 00:00	Received: (01/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 18:42	108-10-1	
Methyl-tert-butyl ether	2.8	ug/L	0.50	1		01/20/17 18:42	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 18:42	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 18:42	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 18:42	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 18:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:42	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 18:42	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 18:42	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 18:42	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 18:42	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 18:42	95-47-6	
Surrogates		Ü						
Dibromofluoromethane (S)	95	%.	72-126	1		01/20/17 18:42	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 18:42	460-00-4	
Toluene-d8 (S)	106	%.	79-119	1		01/20/17 18:42	2037-26-5	
			0 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
Sample: FB-011917	Lab ID: 204	8968015	Collected: 01/19/1		Received: (01/19/17 15:39 I	Matrix: Water	
Parameters	Results —	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 04:01		
Surrogates								
•	102	%.	44-148	1		01/26/17 04:01	460-00-4	
4-Bromofluorobenzene (S)	102 Analytical Meth			1		01/26/17 04:01	460-00-4	
4-Bromofluorobenzene (S) 8260 MSV Low Level				1		01/26/17 04:01 01/20/17 19:01		
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone	Analytical Meth	nod: EPA 50	030B/8260				67-64-1	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene	Analytical Meth	nod: EPA 50 ug/L	030B/8260 4.0	1		01/20/17 19:01	67-64-1 71-43-2	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane	Analytical Meth ND ND	nod: EPA 50 ug/L ug/L	030B/8260 4.0 0.50	1		01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform	Analytical Meth ND ND ND	ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50	1 1 1		01/20/17 19:01 01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane	Analytical Meth ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50	1 1 1		01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK)	Analytical Meth ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50	1 1 1 1		01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide	Analytical Meth ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50 2.0	1 1 1 1 1		01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride	Analytical Meth ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0	1 1 1 1 1 1		01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene	Analytical Meth ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50	1 1 1 1 1 1 1		01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane	Analytical Meth ND ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50	1 1 1 1 1 1 1 1		01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform	Analytical Meth	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1		01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroform Chloromethane	Analytical Meth	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1		01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroform Chloromethane 1,2-Dibromo-3-chloropropane	Analytical Meth	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1 1		01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane	Analytical Meth	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50 1.0 0.50 0.50 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1 1 1		01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane (EDB)	Analytical Meth	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50 1.0 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1 1 1 1		01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1 106-93-4	
4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane (EDB) Dichlorodifluoromethane 1,1-Dichloroethane	Analytical Meth	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50 0.50 1.0 0.50 0.50 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1 1 1		01/20/17 19:01 01/20/17 19:01	67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1 106-93-4 75-71-8	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Sample: FB-011917	Lab ID: 204	8968015	Collected: 01/19/1	17 14:02	Received: 01/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Metl	hod: EPA 50	030B/8260				
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 19:01	1 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/20/17 19:01	1 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/20/17 19:01	1 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/20/17 19:01	1 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 19:01	1 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 19:01	1 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/20/17 19:01	1 100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/20/17 19:01	1 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 19:01	1 98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/20/17 19:01	1 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 19:01	1 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 19:01	1 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/20/17 19:01	1 1634-04-4	
Styrene	ND	ug/L	1.0	1	01/20/17 19:01	1 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 19:01	1 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 19:01	1 127-18-4	
Toluene	ND	ug/L	0.50	1	01/20/17 19:01	1 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 19:01	1 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 19:01	1 79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/20/17 19:01	1 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/20/17 19:01	1 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/20/17 19:01	1 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/20/17 19:01	1 179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/20/17 19:01	1 95-47-6	
Surrogates		-					
Dibromofluoromethane (S)	94	%.	72-126	1	01/20/17 19:01	1 1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1	01/20/17 19:01	1 460-00-4	
Toluene-d8 (S)	107	%.	79-119	1	01/20/17 19:01	1 2037-26-5	



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

LABORATORY CONTROL SAMPLE:

Date: 02/14/2017 09:10 AM

QC Batch: 72788 Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008,

2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

METHOD BLANK: 304892 Matrix: Water

304893

Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008,

2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND ND	50.0	01/25/17 19:25	
4-Bromofluorobenzene (S)	%.	103	44-148	01/25/17 19:25	

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Gasoline Range Organics	ug/L	500	516	103	61-136	
4-Bromofluorobenzene (S)	%.			103	44-148	

MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 30489	4		304895							
			MS	MSD								
		2048968004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	537	506	103	96	15-147	6	20	
4-Bromofluorobenzene (S)	%.						103	106	44-148			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Mercury

Date: 02/14/2017 09:10 AM

QC Batch: 72646 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

METHOD BLANK: 304310 Matrix: Water

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

ParameterUnitsBlank Reporting ResultLimitAnalyzedQualifiersug/LND0.2001/24/17 16:43

LABORATORY CONTROL SAMPLE: 304311

LCS LCS Spike % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1 1.0 102 80-120 Mercury ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304312 304313

MS MSD 2048986001 Spike Spike MS MSD MS MSD % Rec Max RPD RPD Parameter Units Result Conc. Result Result % Rec % Rec Limits Conc. Qual Mercury ug/L ND 1 1 0.99 1.0 99 104 75-125 5 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Mercury, Dissolved

Date: 02/14/2017 09:10 AM

QC Batch: 72612 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

METHOD BLANK: 304161 Matrix: Water

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

ND

0.20

01/24/17 18:41

2048968012, 2048968013, 2048968014

ug/L

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

LABORATORY CONTROL SAMPLE:

LCS LCS Spike % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury, Dissolved 1 1.0 103 80-120 ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304163 304164

304162

MS MSD MS MSD 2048890008 Spike Spike MS MSD % Rec Max RPD RPD Parameter Units Result Conc. Result Result % Rec % Rec Limits Conc. Qual Mercury, Dissolved ug/L ND 1 1 1.1 1.1 91 75-125 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

QC Batch: 72609 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

METHOD BLANK: 304153 Matrix: Water

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/12/17 12:56	
Chromium	mg/L	ND	0.0010	02/12/17 12:56	
Lead	mg/L	ND	0.0010	02/12/17 12:56	
Vanadium	mg/L	ND	0.0050	02/12/17 12:56	

LABORATORY CONTROL SAMPLE:	304154	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	84-115	
Vanadium	mg/L	.02	0.016	82	81-115	

MATRIX SPIKE & MATRIX S	PIKE DUPLIC	CATE: 30415	5		304156							
Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	.02	.02	0.016	0.020	80	101	80-120	23	20	R1
Chromium	mg/L	0.046	.02	.02	0.058	0.074	57	136	80-120	24	20	M1,R1
Lead	mg/L	ND	.02	.02	0.017	0.021	83	107	80-120	25	20	R1
Vanadium	mg/L	ND	.02	.02	0.0097	0.014	49	70	80-120	35	20	M1,R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

QC Batch: 72614 Analysis Method: EPA 6020

QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

METHOD BLANK: 304165 Matrix: Water

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

		Blank	Reporting			
Parameter	Units	Result	Limit	Analyzed	Qualifiers	
Arsenic, Dissolved	ug/L	ND	1.0	02/12/17 13:20		
Chromium, Dissolved	ug/L	ND	1.0	02/12/17 13:20		
Lead, Dissolved	ug/L	ND	1.0	02/12/17 13:20		
Vanadium, Dissolved	ug/L	ND	5.0	02/12/17 13:20		

LABORATORY CONTROL SAMPLE:	304166					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.6	103	80-120	
Chromium, Dissolved	ug/L	20	20.6	103	80-120	
Lead, Dissolved	ug/L	20	20.2	101	80-120	
Vanadium, Dissolved	ug/L	20	18.4	92	80-120	

MATRIX SPIKE & MATRIX SI	PIKE DUPLIC	CATE: 30416	7		304168							
			MS	MSD								
		2048890008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic, Dissolved	ug/L	ND	20	20	19.5	19.5	96	97	75-125	0	20	
Chromium, Dissolved	ug/L	47.9	20	20	67.5	68.0	98	100	75-125	1	20	
Lead, Dissolved	ug/L	ND	20	20	20.3	20.6	102	103	75-125	2	20	
Vanadium, Dissolved	ug/L	ND	20	20	12.4	12.2	62	61	75-125	2	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

QC Batch: 72642 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level

Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008,

2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

METHOD BLANK: 304302 Matrix: Water

Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008,

2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

Blank Reporting	
·	ualifiers
1,1,1-Trichloroethane ug/L ND 0.50 01/20/17 13:16	
1,1,2,2-Tetrachloroethane ug/L ND 0.50 01/20/17 13:16	
1,1,2-Trichloroethane ug/L ND 0.50 01/20/17 13:16	
1,1-Dichloroethane ug/L ND 0.50 01/20/17 13:16	
1,1-Dichloroethene ug/L ND 0.50 01/20/17 13:16	
1,2-Dibromo-3-chloropropane ug/L ND 0.20 01/20/17 13:16	
1,2-Dibromoethane (EDB) ug/L ND 1.0 01/20/17 13:16	
1,2-Dichloroethane ug/L ND 0.50 01/20/17 13:16	
1,2-Dichloropropane ug/L ND 0.50 01/20/17 13:16	
2-Butanone (MEK) ug/L ND 2.0 01/20/17 13:16	
2-Hexanone ug/L ND 1.0 01/20/17 13:16	
4-Methyl-2-pentanone (MIBK) ug/L ND 1.0 01/20/17 13:16	
Acetone ug/L ND 4.0 01/20/17 13:16	
Benzene ug/L ND 0.50 01/20/17 13:16	
Bromodichloromethane ug/L ND 0.50 01/20/17 13:16	
Bromoform ug/L ND 0.50 01/20/17 13:16	
Bromomethane ug/L ND 0.50 01/20/17 13:16	
Carbon disulfide ug/L ND 1.0 01/20/17 13:16	
Carbon tetrachloride ug/L ND 0.50 01/20/17 13:16	
Chlorobenzene ug/L ND 0.50 01/20/17 13:16	
Chloroethane ug/L ND 0.50 01/20/17 13:16	
Chloroform ug/L ND 0.50 01/20/17 13:16	
Chloromethane ug/L ND 0.50 01/20/17 13:16	
cis-1,2-Dichloroethene ug/L ND 1.0 01/20/17 13:16	
cis-1,3-Dichloropropene ug/L ND 0.50 01/20/17 13:16	
Dibromochloromethane ug/L ND 0.50 01/20/17 13:16	
Dichlorodifluoromethane ug/L ND 1.0 01/20/17 13:16	
Ethylbenzene ug/L ND 0.50 01/20/17 13:16	
Isopropylbenzene (Cumene) ug/L ND 1.0 01/20/17 13:16	
m&p-Xylene ug/L ND 2.0 01/20/17 13:16	
Methyl acetate ug/L ND 2.0 01/20/17 13:16	
Methyl-tert-butyl ether ug/L ND 0.50 01/20/17 13:16	
Methylene Chloride ug/L ND 0.50 01/20/17 13:16	
o-Xylene ug/L ND 1.0 01/20/17 13:16	
Styrene ug/L ND 1.0 01/20/17 13:16	
Tetrachloroethene ug/L ND 0.50 01/20/17 13:16	
Toluene ug/L ND 0.50 01/20/17 13:16	
trans-1,2-Dichloroethene ug/L ND 0.50 01/20/17 13:16	
trans-1,3-Dichloropropene ug/L ND 0.50 01/20/17 13:16	
Trichloroethene ug/L ND 0.50 01/20/17 13:16	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

METHOD BLANK: 304302 Matrix: Water

Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008,

2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	01/20/17 13:16	
Vinyl chloride	ug/L	ND	0.50	01/20/17 13:16	
4-Bromofluorobenzene (S)	%.	99	68-124	01/20/17 13:16	
Dibromofluoromethane (S)	%.	97	72-126	01/20/17 13:16	
Toluene-d8 (S)	%.	105	79-119	01/20/17 13:16	

LABORATORY CONTROL SAMPLE	: 304303					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	43.1	86	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	39.5	79	15-179	
1,1,2-Trichloroethane	ug/L	50	44.5	89	58-144	
1,1-Dichloroethane	ug/L	50	42.3	85	63-129	
1,1-Dichloroethene	ug/L	50	40.0	80	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	45.5	91	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.1	92	52-161	
1,2-Dichloroethane	ug/L	50	44.4	89	57-148	
1,2-Dichloropropane	ug/L	50	43.6	87	66-128	
2-Butanone (MEK)	ug/L	50	46.3	93	32-183	
2-Hexanone	ug/L	50	40.6	81	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.3	87	26-171	
Acetone	ug/L	50	45.0	90	22-165	
Benzene	ug/L	50	40.0	80	62-131	
Bromodichloromethane	ug/L	50	45.9	92	69-132	
Bromoform	ug/L	50	44.1	88	35-166	
Bromomethane	ug/L	50	65.4	131	34-158	
Carbon disulfide	ug/L	50	47.8	96	31-128	
Carbon tetrachloride	ug/L	50	44.9	90	54-144	
Chlorobenzene	ug/L	50	50.0	100	70-127	
Chloroethane	ug/L	50	73.6	147	17-195	
Chloroform	ug/L	50	43.1	86	73-134	
Chloromethane	ug/L	50	33.2	66	17-153	
cis-1,2-Dichloroethene	ug/L	50	41.7	83	68-129	
cis-1,3-Dichloropropene	ug/L	50	45.9	92	72-138	
Dibromochloromethane	ug/L	50	45.5	91	49-146	
Dichlorodifluoromethane	ug/L	50	36.0	72	10-179	
Ethylbenzene	ug/L	50	45.1	90	66-126	
Isopropylbenzene (Cumene)	ug/L	50	41.1	82	51-138	
m&p-Xylene	ug/L	100	91.2	91	65-129	
Methyl acetate	ug/L	50	43.6	87	20-142	
Methyl-tert-butyl ether	ug/L	50	44.8	90	37-166	
Methylene Chloride	ug/L	50	46.9	94	46-168	
o-Xylene	ug/L	50	42.7	85	65-124	

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Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

LABORATORY CONTROL SAMPLE:	304303					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Styrene	ug/L	50	47.7	95	72-133	
Tetrachloroethene	ug/L	50	46.5	93	46-157	
Toluene	ug/L	50	45.0	90	69-126	
rans-1,2-Dichloroethene	ug/L	50	40.7	81	60-129	
rans-1,3-Dichloropropene	ug/L	50	47.5	95	59-149	
richloroethene	ug/L	50	45.6	91	67-132	
richlorofluoromethane	ug/L	50	58.3	117	39-171	
nyl chloride	ug/L	50	51.3	103	27-149	
-Bromofluorobenzene (S)	%.			96	68-124	
bromofluoromethane (S)	%.			98	72-126	
oluene-d8 (S)	%.			103	79-119	

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	ATE: 304304	4		304305							
Parameter	Units	2048968003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
1,1,1-Trichloroethane	ug/L	ND	50	50	49.5	47.3	99	95	54-137	5	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.5	42.3	85	85	15-187	1	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	47.1	47.7	94	95	59-148	1	20	
1,1-Dichloroethane	ug/L	ND	50	50	46.7	44.4	93	89	59-133	5	20	
1,1-Dichloroethene	ug/L	ND	50	50	46.5	43.6	93	87	44-146	6	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	47.1	47.1	94	94	23-166	0	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	48.1	48.0	96	96	55-166	0	20	
1,2-Dichloroethane	ug/L	ND	50	50	46.8	45.8	94	92	56-154	2	20	
1,2-Dichloropropane	ug/L	ND	50	50	47.4	46.6	95	93	62-135	2	20	
2-Butanone (MEK)	ug/L	ND	50	50	46.4	45.3	93	91	20-205	2	20	
2-Hexanone	ug/L	ND	50	50	41.4	41.5	83	83	25-189	0	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	43.7	44.0	87	88	23-184	1	20	
Acetone	ug/L	ND	50	50	45.9	48.0	92	96	11-217	4	20	
Benzene	ug/L	ND	50	50	44.4	42.8	89	86	52-141	4	20	
Bromodichloromethane	ug/L	ND	50	50	49.3	48.3	99	97	70-134	2	20	
Bromoform	ug/L	ND	50	50	46.4	46.7	93	93	37-171	1	20	
Bromomethane	ug/L	ND	50	50	73.8	70.8	148	142	34-155	4	20	
Carbon disulfide	ug/L	ND	50	50	57.9	51.8	116	104	28-130	11	20	
Carbon tetrachloride	ug/L	ND	50	50	52.2	49.5	104	99	48-146	5	20	
Chlorobenzene	ug/L	ND	50	50	54.8	54.0	110	108	67-129	1	20	
Chloroethane	ug/L	ND	50	50	89.1	80.3	178	161	12-192	10	20	
Chloroform	ug/L	0.62	50	50	47.7	46.1	94	91	66-143	3	20	
Chloromethane	ug/L	ND	50	50	38.1	35.8	76	72	14-155	6	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	45.6	44.0	91	88	56-141	4	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	48.9	48.1	98	96	70-139	2	20	
Dibromochloromethane	ug/L	ND	50	50	48.5	48.2	97	96	50-150	1	20	
Dichlorodifluoromethane	ug/L	ND	50	50	43.1	42.4	86	85	10-173	2	20	
Ethylbenzene	ug/L	ND	50	50	50.6	49.0	101	98	57-135	3	20	

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Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

MATRIX SPIKE & MATRIX SPIR	KE DUPLIC	CATE: 30430	4 MS	MSD	304305							
		2048968003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Isopropylbenzene (Cumene)	ug/L	ND	50	50	47.3	45.7	95	91	40-146	3	20	
m&p-Xylene	ug/L	ND	100	100	103	97.9	103	98	56-136	5	20	
Methyl acetate	ug/L	ND	50	50	41.7	42.6	83	85	10-142	2	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	46.4	46.1	93	92	35-176	1	20	
Methylene Chloride	ug/L	ND	50	50	50.2	48.7	100	97	45-166	3	20	
o-Xylene	ug/L	ND	50	50	47.8	46.9	96	94	57-133	2	20	
Styrene	ug/L	ND	50	50	51.5	50.5	103	101	58-144	2	20	
Tetrachloroethene	ug/L	ND	50	50	54.4	51.8	109	104	48-143	5	20	
Toluene	ug/L	ND	50	50	50.2	48.3	100	97	59-136	4	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	47.1	44.0	94	88	57-132	7	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	50.6	50.2	101	100	59-154	1	20	
Trichloroethene	ug/L	ND	50	50	51.8	49.7	104	99	58-140	4	20	
Trichlorofluoromethane	ug/L	ND	50	50	72.9	68.4	146	137	24-175	6	20	
Vinyl chloride	ug/L	ND	50	50	58.5	56.3	117	113	21-150	4	20	
4-Bromofluorobenzene (S)	%.						98	99	68-124			
Dibromofluoromethane (S)	%.						97	97	72-126			
Toluene-d8 (S)	%.						102	103	79-119			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

QC Batch: 72656 Analysis Method: EPA 8015B Modified QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

METHOD BLANK: 304345 Matrix: Water

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	02/02/17 11:02	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	02/02/17 11:02	
n-Pentacosane (S)	%.	37	16-137	02/02/17 11:02	
o-Terphenyl (S)	%.	49	10-121	02/02/17 11:02	

LABORATORY CONTROL SAMPLE:	304346					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	ND	20	10-115	
n-Pentacosane (S)	%.			18	16-137	
o-Terphenyl (S)	%.			25	10-121	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

QC Batch: 73658 Analysis Method: EPA 8015B Modified QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2048968006

METHOD BLANK: 308983 Matrix: Water

Associated Lab Samples: 2048968006

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND ND	0.25	02/06/17 12:16	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	02/06/17 12:16	
n-Pentacosane (S)	%.	55	16-137	02/06/17 12:16	
o-Terphenyl (S)	%.	56	10-121	02/06/17 12:16	

LABORATORY CONTROL SAMPLE: 308984

Date: 02/14/2017 09:10 AM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.23J	58	10-115	
n-Pentacosane (S)	%.			54	16-137	
o-Terphenyl (S)	%.			68	10-121	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

QC Batch: 72748 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

METHOD BLANK: 304752 Matrix: Water

Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/31/17 13:14	
Acenaphthene	ug/L	ND	0.10	01/31/17 13:14	
Acenaphthylene	ug/L	ND	0.10	01/31/17 13:14	
Anthracene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(a)anthracene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(a)pyrene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Chrysene	ug/L	ND	0.10	01/31/17 13:14	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/31/17 13:14	
Fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Fluorene	ug/L	ND	0.10	01/31/17 13:14	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/31/17 13:14	
Naphthalene	ug/L	ND	0.10	01/31/17 13:14	
Phenanthrene	ug/L	ND	0.10	01/31/17 13:14	
Pyrene	ug/L	ND	0.10	01/31/17 13:14	
2-Fluorobiphenyl (S)	%.	78	25-150	01/31/17 13:14	
Terphenyl-d14 (S)	%.	82	25-150	01/31/17 13:14	

LABORATORY CONTROL SAMPLE:	304753					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.1	76	35-150	
Acenaphthene	ug/L	4	2.8	69	35-150	
Acenaphthylene	ug/L	4	2.8	69	35-150	
Anthracene	ug/L	4	3.9	96	35-150	
Benzo(a)anthracene	ug/L	4	3.2	80	35-150	
Benzo(a)pyrene	ug/L	4	3.0	75	35-150	
Benzo(b)fluoranthene	ug/L	4	3.0	75	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.3	84	35-150	
Benzo(k)fluoranthene	ug/L	4	2.9	71	35-150	
Chrysene	ug/L	4	3.1	77	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.3	83	35-150	
Fluoranthene	ug/L	4	3.1	77	35-150	
Fluorene	ug/L	4	2.8	70	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.3	84	35-150	
Naphthalene	ug/L	4	2.6	64	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

LABORATORY CONTROL SAMPLE:	304753					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Phenanthrene	ug/L		3.1	76	35-150	
Pyrene	ug/L	4	3.1	77	35-150	
2-Fluorobiphenyl (S)	%.			81	25-150	
Terphenyl-d14 (S)	%.			88	25-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72656

[1]

Batch: 73229

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 73444

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 73710

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

Date: 02/14/2017 09:10 AM

1b Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Reanalysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

C9 Common Laboratory Contaminant.

H2 Extraction or preparation conducted outside EPA method holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

₋ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2048968002	EB-011817	EPA 3535	72656	EPA 8015B Modified	73444
2048968003	MW-38A	EPA 3535	72656	EPA 8015B Modified	73444
048968004	MW-84B2	EPA 3535	72656	EPA 8015B Modified	73444
048968005	MW-84A	EPA 3535	72656	EPA 8015B Modified	73444
048968006	MW-17B	EPA 3535	72656	EPA 8015B Modified	73444
048968006	MW-17B	EPA 3535	73658	EPA 8015B Modified	73710
048968009	EB-011917	EPA 3535	72656	EPA 8015B Modified	73444
048968010	MW-77B	EPA 3535	72656	EPA 8015B Modified	73444
48968011	MW-20B	EPA 3535	72656	EPA 8015B Modified	73444
48968012	MW-78B	EPA 3535	72656	EPA 8015B Modified	73444
48968013	MW-21B	EPA 3535	72656	EPA 8015B Modified	73444
148968014	DUP007	EPA 3535	72656	EPA 8015B Modified	73444
48968001	TB-011817	EPA 8015/8021	72788		
148968002	EB-011817	EPA 8015/8021	72788		
48968003	MW-38A	EPA 8015/8021	72788		
148968004	MW-84B2	EPA 8015/8021	72788		
48968005	MW-84A	EPA 8015/8021	72788		
48968006	MW-17B	EPA 8015/8021	72788		
48968007	FB-011817	EPA 8015/8021	72788		
48968008	TB-011917	EPA 8015/8021	72788		
48968009	EB-011917	EPA 8015/8021	72788		
48968010	MW-77B	EPA 8015/8021	72788		
48968011	MW-20B	EPA 8015/8021	72788		
48968012	MW-78B	EPA 8015/8021	72788		
48968013	MW-21B	EPA 8015/8021	72788		
48968014	DUP007	EPA 8015/8021	72788		
48968015	FB-011917	EPA 8015/8021	72788		
48968002	EB-011817	EPA 3010	72609	EPA 6020	72692
48968003	MW-38A	EPA 3010	72609	EPA 6020	72692
48968004	MW-84B2	EPA 3010	72609	EPA 6020	72692
48968005	MW-84A	EPA 3010	72609	EPA 6020	72692
48968006	MW-17B	EPA 3010	72609	EPA 6020	72692
48968009	EB-011917	EPA 3010	72609	EPA 6020	72692
48968010	MW-77B	EPA 3010	72609	EPA 6020	72692
48968011	MW-20B	EPA 3010	72609	EPA 6020	72692
48968012	MW-78B	EPA 3010	72609	EPA 6020	72692
48968013	MW-21B	EPA 3010	72609	EPA 6020	72692
48968014	DUP007	EPA 3010	72609	EPA 6020	72692
48968002	EB-011817	EPA 3005A	72614	EPA 6020	72700
48968003	MW-38A	EPA 3005A	72614	EPA 6020	72700
48968004	MW-84B2	EPA 3005A	72614	EPA 6020	72700
48968005	MW-84A	EPA 3005A	72614	EPA 6020	72700
48968006	MW-17B	EPA 3005A	72614	EPA 6020	72700
48968009	EB-011917	EPA 3005A	72614	EPA 6020	72700
48968010	MW-77B	EPA 3005A	72614	EPA 6020	72700
48968011	MW-20B	EPA 3005A	72614	EPA 6020	72700

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
	MW-78B	EPA 3005A	72614	EPA 6020	72700
2048968013	MW-21B	EPA 3005A	72614	EPA 6020	72700
2048968014	DUP007	EPA 3005A	72614	EPA 6020	72700
2048968002	EB-011817	EPA 7470	72646	EPA 7470	72694
2048968003	MW-38A	EPA 7470	72646	EPA 7470	72694
2048968004	MW-84B2	EPA 7470	72646	EPA 7470	72694
2048968005	MW-84A	EPA 7470	72646	EPA 7470	72694
2048968006	MW-17B	EPA 7470	72646	EPA 7470	72694
2048968009	EB-011917	EPA 7470	72646	EPA 7470	72694
2048968010	MW-77B	EPA 7470	72646	EPA 7470	72694
2048968011	MW-20B	EPA 7470	72646	EPA 7470	72694
2048968012	MW-78B	EPA 7470	72646	EPA 7470	72694
2048968013	MW-21B	EPA 7470	72646	EPA 7470	72694
2048968014	DUP007	EPA 7470	72646	EPA 7470	72694
2048968002	EB-011817	EPA 7470	72612	EPA 7470	72699
2048968003	MW-38A	EPA 7470	72612	EPA 7470	72699
2048968004	MW-84B2	EPA 7470	72612	EPA 7470	72699
2048968005	MW-84A	EPA 7470	72612	EPA 7470	72699
2048968006	MW-17B	EPA 7470	72612	EPA 7470	72699
2048968009	EB-011917	EPA 7470	72612	EPA 7470	72699
2048968010	MW-77B	EPA 7470	72612	EPA 7470	72699
2048968011	MW-20B	EPA 7470	72612	EPA 7470	72699
2048968012	MW-78B	EPA 7470	72612	EPA 7470	72699
2048968013	MW-21B	EPA 7470	72612	EPA 7470	72699
2048968014	DUP007	EPA 7470	72612	EPA 7470	72699
2048968002	EB-011817	EPA 3510	72748	EPA 8270 by SIM	73229
2048968003	MW-38A	EPA 3510	72748	EPA 8270 by SIM	73229
2048968004	MW-84B2	EPA 3510	72748	EPA 8270 by SIM	73229
2048968005	MW-84A	EPA 3510	72748	EPA 8270 by SIM	73229
2048968006	MW-17B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968009	EB-011917	EPA 3510	72748	EPA 8270 by SIM	73229
2048968010	MW-77B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968011	MW-20B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968012	MW-78B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968013	MW-21B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968014	DUP007	EPA 3510	72748	EPA 8270 by SIM	73229
2048968001	TB-011817	EPA 5030B/8260	72642		
2048968002	EB-011817	EPA 5030B/8260	72642		
2048968003	MW-38A	EPA 5030B/8260	72642		
2048968004	MW-84B2	EPA 5030B/8260	72642		
2048968005	MW-84A	EPA 5030B/8260	72642		
2048968006	MW-17B	EPA 5030B/8260	72642		
2048968007	FB-011817	EPA 5030B/8260	72642		
2048968008	TB-011917	EPA 5030B/8260	72642		
2048968009	EB-011917	EPA 5030B/8260	72642		
2048968010	MW-77B	EPA 5030B/8260	72642		
2048968011	MW-20B	EPA 5030B/8260	72642		



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/14/2017 09:10 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048968012	MW-78B	EPA 5030B/8260	72642		
2048968013	MW-21B	EPA 5030B/8260	72642		
2048968014	DUP007	EPA 5030B/8260	72642		
2048968015	FB-011917	EPA 5030B/8260	72642		

CHAIN-OF-CUSTODY / Ar WO# : 2048968

Report To: EFrain Calders Address: Company Name: REGULATORY AGENCY Address: NPDES GROUND WATER DRINKING WATER Address: NPDES GROUND WATER DRINKING WATER Address: NPDES GROUND WATER DRINKING WATER Address: NPDES GROUND WATER DRINKING WATER OTHER Email To: Reference: Reference: Purchase Order No.: Reference: Project Name: Purchase Order No.: Site Location Phone: Will 17 4086 Project Name: Purchase Order No.: Pace Profile #: STATE: PROJECT Number: Food 1605 B Requested Due Date/TAT: Standar Project Number: Excl. 1605 B Requested Analysis Filtered (Y/N)
Requested Due Date/TAT: Standar Respectively Respectively Pace Profile #: Pace Quote Reference:
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Section D Matrix Codes 🙀 🖟 COLLECTED Preservatives
Section D Required Client Information MATRIX / CODE ACCULECTED Preservatives Preservatives Required Client Information
Drinking Water DW 3 0 5
SAMPLE ID (A-Z, 0-9/-) Sample IDs MUST BE UNIQUE Sample IDs MUST BE UNIQUE (A-Z, 0-9/-) Sample IDs MUST BE UNIQUE (A-Z, 0-9/-) Sample IDs MUST BE UNIQUE (Besidinal Chlorine (Composite Endigana) (A-Z, 0-9/-) Sample IDs MUST BE UNIQUE (Besidinal Chlorine (Composite Endigana) (Composite Start Endigana) (Composite Endigan
SAMPLE ID Water Wave Water WW Product P Soil/Soild SL Soil/Soil Sc Soil/Soil SL Soil/Soil Sc Soil/Soil Sc Soil/Soil Sc Soil/Soil Sc Soil/Soil Sc Soil/Soil Sc Soil/Soil S
SAMPLE ID Soil/Solid SL Soil/Soild SL Soil/Soild Sl Soi
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5 NW-894 WW W 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
6 _ /w-11 B
8 TB-0(191) MID 10 10 10 10 10 10 10 10 10 10 10 10 10
9 55-00977
10
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SAMPLER NAME AND SIGNATURE
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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Section	В		Section C		Pa	age: 2 of Z
Required Client Information: Required	Project Information:		Invoice Information:		<u>,</u>	
Company: A - Control	15 Frain	(2)26/20	Attention:	• — —		2075276
Addressitiview flows mire 401 Copy To:		-	Company Name:		REGULATORY AGENC	
Rd 165 Km 1,7 amount P.B.			Address:		□ NPDES □ GRO	UND WATER CORINKING WATER
Address First Flow hite 401 Copy To: Rd 165 Km 1.7 chyndbo P.R. Email To: EFFA, caleur @ rush is Purchase Phone: H-177-4000 Fex. H-177-4000 Project Ni	Order No.:		Pace Quote Reference:		UST TRCR	A OTHER
Phone: Fax: Project No.	ame: P	Termina bu	Pace Project Manager: 5-2- Red	2000	Site Location &	
Requested Due Date/TAT: Project No	umber: EOO2		Pace Profile #:		STATE:	$\underline{\boldsymbol{\beta}}$
	10002	. 100515	<u> </u>	Requested	Analysis Filtered (Y/N)	
Section D Matrix Codes Required Client Information MATRIX / CODE	o teft)	COLLECTED	Preservatives	Tu A		
Drinking Water WT Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP (A-Z, 0-9 / ,-) Air AR Sample IDs MUST BE UNIQUE Tissue TS Other OT	MATRIX CODE (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP)	E TEMP AT COLL	NTAINEF	Analysis Test 1	etals A	Residual Chlorine (Y/N) Bace Project No./ Lab J.D.
<u> </u>	Maria Maria	TIME DATE TIME S	# OF HNO. NaOH	₹ <i>> \</i> \	1 2 6	Pace Project No./ Lab l.D.
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ADDITIONAL COMMENTS	RELINQUISHED BY	weet grans, seede war 1966 in 1966	TIME ACCEPTED	BY / AFFILIATION	DATE TIME	SAMPLE CONDITIONS
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ORIGINA OR		SIGNATURE of SAMPLER	^	DATE Signed (MM/DD/YY):	01/19/17	Received on Ice (Y/N) Custody Sealed Cooler (Y/N) (Y/N)

Sample Condition Upon Receipt

Pace Analytical	1000 Riverbend, Blvd., Suite St. Rose, LA 70087	e F			F	Projec	:t #:	20
Courier: Pace Courier	☐ Hired Courier	Fe	ed X		P\$	□ DH	L	☐ USPS ☐ Customer ☐ Other
Custody Seal on Cooler/Box Pr	resent: [see 0	COC]	-					Custody Seals intact: ☐ es ☐ No
Therometer	sher IR 6	Туре	of Ice	- (v	Vet	Blue No	ne	Samples on ice: [see COC]
Cooler Temperature: [see C	OC] Tem	p shou	ld be a	above f	reezinç	g to 6°C		Date and Initials of person examining contents:
Temp must be measured from Tem	nperature blank when p	resent			Comn	nents:		
Temperature Blank Present"?		□Yes	□No	□N/A	1			
Chain of Custody Present:		W€s	□No	□n/a	2			
Chain of Custody Complete:		Yes	□No	□n/a	3			
Chain of Custody Relinquished		Yes	□No	□n/a	4		,	
Sampler Name & Signature on	COC:	Yes	□No	□n/a	5			
Samples Arrived within Hold Tir	me:	Yes	□No	□n/a	6			
Sufficient Volume:		Yes	□No	□n/a	7			
Correct Containers Used:		Yes	□No	□n/a	8			
Filtered vol. Rec. for Diss. tests	· 	□Yes	□No	₽ Ν/Α	9			
Sample Labels match COC:		₽Yes	□No	□n/a	10		1.00	
All containers received within m precautionary and/or expiration		Yes	□No	□n/a	11			
All containers needing chemica been checked (except VOA, co		J ¥ €s	□No	□n/a	12			
All containers preservation checompliance with EPA recomme		Yes	□No	□n/a	13			reserative added? □Yes □No ord lot no.: HNO3 H2SO4
Headspace in VOA Vials (>6m	m):	□Yes	ØN ₀	□n/a	14		`	
Trip Blank Present:		Yes	□No		15	**		
Client Notification/ Resolutio	n:							
Person Contacted:								Date/Time:
Comments/ Resolution:								
<u> </u>	· · · · · · · · · · · · · · · · · · ·							
								-





February 14, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 18, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

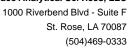
Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC):

F-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048890001	TB-011717	Water	01/17/17 00:00	01/18/17 14:45
2048890002	EB-011717	Water	01/17/17 09:46	01/18/17 14:45
2048890003	MW-110AB	Water	01/17/17 10:49	01/18/17 14:45
2048890004	MW-110B2	Water	01/17/17 11:38	01/18/17 14:45
2048890005	MW-111A	Water	01/17/17 12:36	01/18/17 14:45
2048890006	MW-114A	Water	01/17/17 16:21	01/18/17 14:45
2048890007	DUP006	Water	01/17/17 00:00	01/18/17 14:45
2048890008	MW-75B2	Water	01/17/17 14:50	01/18/17 14:45
2048890009	FB-011717	Water	01/17/17 16:30	01/18/17 14:45
2048890010	MW-63A	Water	01/18/17 10:33	01/18/17 14:45



SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048890001	TB-011717	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048890002	EB-011717	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048890003	MW-110AB	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048890004	MW-110B2	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048890005	MW-111A	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048890006	MW-114A	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

ab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048890007	DUP006	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048890008	MW-75B2	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048890009	FB-011717	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048890010	MW-63A	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N



PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

10 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 6020

Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72609

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304155)
 - Chromium
 - Vanadium
- MSD (Lab ID: 304156)
 - Chromium
 - Vanadium

R1: RPD value was outside control limits.

- MSD (Lab ID: 304156)
 - Arsenic
 - Chromium
 - Lead
 - Vanadium



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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 6020

Description:6020 MET ICPMSClient:BBL Caribe / Arcadis PRDate:February 14, 2017

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72614

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MS (Lab ID: 304167)
Vanadium, Dissolved

• MSD (Lab ID: 304168)

Vanadium, Dissolved

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 7470
Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72547

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 72592

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304108)
 - Anthracene
- MSD (Lab ID: 304109)
 - Anthracene

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

10 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72436

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 303415)
 - Styrene
- MSD (Lab ID: 303416)
 - Styrene

Additional Comments:

Analyte Comments:

QC Batch: 72436

C9: Common Laboratory Contaminant.DUP006 (Lab ID: 2048890007)

Acetone



PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method:EPA 5030B/8260Description:8260 MSV Low LevelClient:BBL Caribe / Arcadis PRDate:February 14, 2017

Analyte Comments:

QC Batch: 72436

C9: Common Laboratory Contaminant.

• EB-011717 (Lab ID: 2048890002)

Acetone

• FB-011717 (Lab ID: 2048890009)

Acetone

• MW-110AB (Lab ID: 2048890003)

Acetone

• MW-110B2 (Lab ID: 2048890004)

Acetone

• MW-114A (Lab ID: 2048890006)

Acetone

• MW-63A (Lab ID: 2048890010)

Acetone

• MW-75B2 (Lab ID: 2048890008)

Acetone

• TB-011717 (Lab ID: 2048890001)

Acetone

This data package has been reviewed for quality and completeness and is approved for release.



Project: PUMA TERMINAL CW SAMPLING

Date: 02/14/2017 09:05 AM

Sample: TB-011717	Lab ID: 204	8890001	Collected: 01/17/1	7 00:00	Received: 01/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021		-	·	
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1	01/20/17 06:	05	
4-Bromofluorobenzene (S)	94	%.	44-148	1	01/20/17 06:	05 460-00-4	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260				
Acetone	19.6	ug/L	4.0	1	01/19/17 14:	18 67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/19/17 14:	18 71-43-2	
Bromodichloromethane	0.56	ug/L	0.50	1	01/19/17 14:	18 75-27-4	
Bromoform	ND	ug/L	0.50	1	01/19/17 14:	18 75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/19/17 14:	18 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/19/17 14:	18 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/19/17 14:	18 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1	01/19/17 14:	18 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/19/17 14:	18 108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/19/17 14:	18 75-00-3	
Chloroform	2.5	ug/L	0.50	1	01/19/17 14:	18 67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/19/17 14:	18 74-87-3	
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/19/17 14:	18 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		18 124-48-1	
I,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		18 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/19/17 14:		
1,1-Dichloroethane	ND	ug/L	0.50	1	01/19/17 14:		
,, Dichloroethane	ND	ug/L	0.50	1		18 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/19/17 14:		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		18 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		18 156-60-5	
1,2-Dichloropropane	ND ND	ug/L ug/L	0.50	1	01/19/17 14:		
	ND ND		0.50	1		18 10061-01-5	
cis-1,3-Dichloropropene		ug/L					
rans-1,3-Dichloropropene	ND	ug/L	0.50	1 1		18 10061-02-6	
Ethylbenzene	ND	ug/L	0.50			18 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		18 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/19/17 14:		
Methyl acetate	ND	ug/L	2.0	1	01/19/17 14:		
Methylene Chloride	ND	ug/L	0.50	1	01/19/17 14:		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/19/17 14:		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		18 1634-04-4	
Styrene	ND	ug/L	1.0	1		18 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/19/17 14:		
Tetrachloroethene	ND	ug/L	0.50	1		18 127-18-4	
Toluene	ND	ug/L	0.50	1		18 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/19/17 14:		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/19/17 14:		
Trichloroethene	ND	ug/L	0.50	1	01/19/17 14:	18 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/19/17 14:	18 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/19/17 14:	18 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/19/17 14:	18 179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/19/17 14:	18 95-47-6	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: TB-011717	Lab ID: 2	2048890001	Collected: 01/17/1	7 00:00	Received: 0	1/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical N	Method: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	95		72-126	1		01/19/17 14:1		
4-Bromofluorobenzene (S)	100		68-124	1		01/19/17 14:1		
oluene-d8 (S)	108	%.	79-119	1		01/19/17 14:1	8 2037-26-5	
Sample: EB-011717	Lab ID: 2	2048890002	Collected: 01/17/1	7 09:46	Received: 0	1/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical N	Method: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 18:5	7	
Dil Range Organics (>C28-C40) Surrogates	ND	J	1.0	1		01/29/17 18:5		
n-Pentacosane (S)	53	%.	16-137	1	01/19/17 13:07	01/29/17 18:5	7 629-99-2	
p-Terphenyl (S)	51	%.	10-121	1	01/19/17 13:07	01/29/17 18:5	7 84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical N	Method: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 08:1	7	
I-Bromofluorobenzene (S)	93	%.	44-148	1		01/20/17 08:1	7 460-00-4	
020 MET ICPMS	Analytical N	Method: EPA 60	020 Preparation Meth	nod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:0	5 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:0	5 7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:0	5 7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:0	5 7440-62-2	
020 MET ICPMS, Dissolved (LF)	Analytical N	Method: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:1	0 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:1	0 7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:1	0 7439-92-1	
anadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:1	0 7440-62-2	
470 Mercury	Analytical N	Method: EPA 74	470 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:2	1 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical N	Method: EPA 74	470 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:4	6 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical N	Method: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:0	5 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:0	5 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:0	5 120-12-7	
Benzo(a)anthracene	ND	•	0.10	1	01/21/17 12:15	01/30/17 22:0	5 56-55-3	
Benzo(a)pyrene	ND	-	0.10	1	01/21/17 12:15	01/30/17 22:0	5 50 32 9	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: EB-011717	Lab ID: 204	8890002	Collected: 01/17/1	7 09:46	Received: 01	/18/17 14:45 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Metl	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15			
Surrogates		Ū						
2-Fluorobiphenyl (S)	123	%.	25-150	1	01/21/17 12:15	01/30/17 22:05	321-60-8	
Terphenyl-d14 (S)	123	%.	25-150	1	01/21/17 12:15	01/30/17 22:05	1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	22.3	ug/L	4.0	1		01/19/17 14:37	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 14:37	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 14:37	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 14:37	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 14:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 14:37	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 14:37	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 14:37	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 14:37	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 14:37	75-00-3	
Chloroform	2.1	ug/L	0.50	1		01/19/17 14:37	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 14:37	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 14:37	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 14:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 14:37	106-93-4	
Dichlorodifluoromethane 2	ND	ug/L	1.0	1		01/19/17 14:37	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	75-34-3	
,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	107-06-2	
,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:37		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:37		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:37		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:37		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:37		
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:37		
2-Hexanone	ND	ug/L	1.0	1		01/19/17 14:37		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:37		
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:37		
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:37		
4-Methyl-2-pentanone (MIBK)	ND ND	ug/L ug/L	1.0	1		01/19/17 14:37		



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: EB-011717	Lab ID: 2048	8890002	Collected: 01/17/1	7 09:46	Received: 01	/18/17 14:45 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 14:37	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 14:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:37	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 14:37	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 14:37	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 14:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:37	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:37		
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 14:37		
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:37		
Surrogates		y -	0	-			· ·	
Dibromofluoromethane (S)	96	%.	72-126	1		01/19/17 14:37	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/19/17 14:37	460-00-4	
Toluene-d8 (S)	106	%.	79-119	1		01/19/17 14:37		
,								
Sample: MW-110AB	Lab ID: 2048	3890003	Collected: 01/17/1	7 10:49	Received: 01	/18/17 14:45 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	od: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	;		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 19:28		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07			
Surrogates		Ü						
n-Pentacosane (S)								
	52	%.	16-137	1	01/19/17 13:07	01/29/17 19:28	629-99-2	
` ,	52 55	%. %.	16-137 10-121	1 1	01/19/17 13:07 01/19/17 13:07			
o-Terphenyl (S)		%.	10-121					
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	55	%.	10-121				84-15-1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	55 Analytical Meth	%. nod: EPA 80	10-121	1		01/29/17 19:28	84-15-1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	55 Analytical Meth ND 92	%. nod: EPA 80 ug/L %.	10-121 015/8021 50.0	1 1 1	01/19/17 13:07	01/29/17 19:28 01/20/17 06:32	84-15-1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS	55 Analytical Meth ND 92 Analytical Meth	%. nod: EPA 80 ug/L %. nod: EPA 60	10-121 015/8021 50.0 44-148 020 Preparation Meth	1 1 1 nod: EPA	01/19/17 13:07	01/29/17 19:28 01/20/17 06:32 01/20/17 06:32	84-15-1 460-00-4	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic	55 Analytical Meth ND 92 Analytical Meth 0.0012	%. ug/L %. nod: EPA 60 mg/L	10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010	1 1 1 nod: EPA 1	01/19/17 13:07 . 3010 . 01/24/17 08:30	01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09	84-15-1 460-00-4 7440-38-2	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium	55 Analytical Meth ND 92 Analytical Meth 0.0012 0.0015	%. ug/L %. nod: EPA 60 mg/L mg/L	10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010	1 1 1 nod: EPA 1 1	01/19/17 13:07 3010 01/24/17 08:30 01/24/17 08:30	01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09	84-15-1 460-00-4 7440-38-2 7440-47-3	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead	55 Analytical Method ND 92 Analytical Method 0.0012 0.0015 ND	%. ug/L %. nod: EPA 60 mg/L mg/L mg/L	10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010	1 1 1 nod: EPA 1 1	01/19/17 13:07 .3010 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium	Analytical Meth ND 92 Analytical Meth 0.0012 0.0015 ND 0.20	%. ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010 0.0050	1 1 1 nod: EPA 1 1 1	01/19/17 13:07 3010 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	Analytical Method ND 92 Analytical Method 0.0012 0.0015 ND 0.20 Analytical Method ND 0.20	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L ood: EPA 60	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 nod: EPA 1 1 1 nod: EPA	01/19/17 13:07 01/19/17 13:07 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 03005A	01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Analytical Method ND 92 Analytical Method NO 92 Analytical Method NO 92 Analytical Method ND 0.20 Analytical Method ND	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L ood: EPA 60 ug/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 nod: EPA 1 1 1 nod: EPA 1	01/19/17 13:07 01/19/17 13:07 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 09:53	01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09 02/12/17 19:14	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved	Analytical Method ND 92 Analytical Method ND 92 Analytical Method ND 0.20 Analytical Method ND ND ND	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L od: EPA 60 ug/L ug/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth 1.0	1 1 1 nod: EPA 1 1 nod: EPA 1 1 1 1 1 1 1 1 1 1 1 1 1 1	01/19/17 13:07 01/19/17 13:07 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 09:53 01/24/17 09:53	01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09 02/12/17 19:14 02/12/17 19:14	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2 7440-47-3	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO	Analytical Method ND 92 Analytical Method NO 92 Analytical Method NO 92 Analytical Method ND 0.20 Analytical Method ND	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L ood: EPA 60 ug/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 nod: EPA 1 1 1 nod: EPA 1	01/19/17 13:07 01/19/17 13:07 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 09:53	01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09 02/12/17 19:14 02/12/17 19:14 02/12/17 19:14	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-38-2 7440-47-3 7439-92-1	



Project: PUMA TERMINAL CW SAMPLING

Date: 02/14/2017 09:05 AM

Complex MW 44CAD	Late ID: COA	0000000	College of 04/47/4	7 10:10	Donoi:	/40/47 44.45	Motrice Materia	
Sample: MW-110AB	Lab ID: 2048890003 Collected: 01/1			7 10:49	Received: 01	/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:23	3 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	od: EP/	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:48	3 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparation	on Meth	nod: EPA 3510			
Acenaphthene	0.45	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:28	5 83-32-9	
cenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	5 208-96-8	
Anthracene	0.23	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	5 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	5 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15			
Benzo(k)fluoranthene	ND	ug/L ug/L	0.10	1	01/21/17 12:15		-	
	ND ND	-	0.10	1	01/21/17 12:15			
Chrysene		ug/L						
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15			
luoranthene	ND	ug/L	0.10	1	01/21/17 12:15			
luorene	ND	ug/L	0.10	1	01/21/17 12:15			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15			
-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:2	5 91-57-6	
laphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	5 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	5 85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	5 129-00-0	
Surrogates		-						
2-Fluorobiphenyl (S)	121	%.	25-150	1	01/21/17 12:15	01/30/17 22:2	5 321-60-8	
Ferphenyl-d14 (S)	114	%.	25-150	1	01/21/17 12:15	01/30/17 22:25	5 1718-51-0	
260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
acetone	12.0	ug/L	4.0	1		01/19/17 14:5		C9
Benzene	ND	ug/L	0.50	1		01/19/17 14:5	5 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 14:5	5 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 14:5	5 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 14:5	5 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 14:5	5 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 14:5	5 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 14:5		
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 14:5		
Chloroethane	ND	ug/L	0.50	1		01/19/17 14:5		
Chloroform	ND	ug/L	0.50	1		01/19/17 14:5		
Chloromethane	ND ND	_	0.50			01/19/17 14:5		
		ug/L		1				
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 14:5		
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 14:5		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 14:5		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 14:5		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:5		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:5	5 107-06-2	



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-110AB	Lab ID: 2048890003		Collected: 01/17/17 10:49		Received: 01	I/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:55	5 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:55	5 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:55	5 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:55	5 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:55	5 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 14:55	5 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:55	5 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:55	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:55		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 14:55		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 14:55		
Styrene	ND	ug/L	1.0	1		01/19/17 14:55		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:55		
Tetrachloroethene	ND ND	ug/L ug/L	0.50	1		01/19/17 14:55		
Toluene	ND ND	ug/L ug/L	0.50	1		01/19/17 14:55	_	
1,1,1-Trichloroethane	ND ND	-	0.50	1		01/19/17 14:55		
* *		ug/L						
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:55		
Trichloroethene	ND	ug/L	0.50	1		01/19/17 14:55		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:55		
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:55		
m&p-Xylene	ND	ug/L	2.0	1			5 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:55	5 95-47-6	
Surrogates	0.5	0.4	70.400			04/40/47 44 55		
Dibromofluoromethane (S)	95	%.	72-126	1		01/19/17 14:55		
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/19/17 14:55		
Toluene-d8 (S)	107	%.	79-119	1		01/19/17 14:55	5 2037-26-5	
Sample: MW-110B2	Lab ID: 204	8890004	Collected: 01/17/1	7 11:38	Received: 01	 /18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Metl	nod: EPA 80	O15B Modified Prepa	ration M		 5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 19:59)	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/29/17 19:59		
Surrogates	112	9/ =	1.0	•	2.7.07.17 10.07	2.725, 17 10.00	=	
n-Pentacosane (S)	44	%.	16-137	1	01/19/17 13:07	01/29/17 19:59	9 629-99-2	
o-Terphenyl (S)	50	%.	10-121	1		01/29/17 19:59		
8021 GCV BTEX, MTBE, GRO	Analytical Meth							
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 06:58	3	
	IND	ug/∟	50.0			01/20/17 00.00	,	
Surrogates		Ü						



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-110B2	Lab ID: 2048	3890004	Collected: 01/17/1	17 11:38	Received: 01	/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Met	hod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:13	3 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:13	3 7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:13	3 7439-92-1	
√anadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:13	3 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:18	3 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:18	3 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:18	3 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:18	3 7440-62-2	
470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Met	hod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:30	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	170 Preparation Met	hod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:50	7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 83-32-9	
cenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 208-96-8	
nthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 120-12-7	
enzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 56-55-3	
enzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 50-32-8	
enzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 191-24-2	
enzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 207-08-9	
hrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 53-70-3	
luoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 206-44-0	
luorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 193-39-5	
-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 91-57-6	
laphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	5 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15			
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15			
Surrogates	110	ug/ =	0.10	·	01/21/11 12:10	01/00/17 22:10	120 00 0	
-Fluorobiphenyl (S)	117	%.	25-150	1	01/21/17 12:15	01/30/17 22:45	321-60-8	
erphenyl-d14 (S)	123	%.	25-150	1	01/21/17 12:15	01/30/17 22:45	5 1718-51-0	
260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
acetone	4.3	ug/L	4.0	1		01/19/17 15:13	3 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 15:13	3 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 15:13	3 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 15:13		
Bromomethane	ND	ug/L	0.50	1		01/19/17 15:13		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 15:13		

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-110B2	Lab ID: 204	8890004	Collected: 01/17/1	7 11:38	Received:	01/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 15:1:	3 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 15:13	3 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 15:13	3 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 15:13	3 75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 15:13	3 67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 15:13	3 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 15:13	3 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 15:13	3 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 15:13	3 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 15:13	3 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:13	3 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:13	3 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:13	3 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 15:1:	3 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:1:		
,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 15:1:		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:1:		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:1:		
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 15:1:		
2-Hexanone	ND	ug/L	1.0	1		01/19/17 15:1:		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 15:1:		
Methyl acetate	ND	ug/L	2.0	1		01/19/17 15:1:		
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 15:1:		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 15:1:		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 15:1:		
Styrene	ND	ug/L	1.0	1		01/19/17 15:1:		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 15:1:		
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 15:1:		
Toluene	ND	ug/L	0.50	1		01/19/17 15:1:		
I,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:1:		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:1:		
Frichloroethene	ND	ug/L	0.50	1		01/19/17 15:1:		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 15:1:		
/inyl chloride	ND	ug/L	0.50	1		01/19/17 15:1:		
n&p-Xylene	ND	ug/L	2.0	1			3 179601-23-1	
o-Xylene	ND ND	ug/L	1.0	1		01/19/17 15:1:		
Surrogates	IND	ug/L	1.0	1		01/10/17 10.15	J JJ 71-U	
Dibromofluoromethane (S)	93	%.	72-126	1		01/19/17 15:1:	3 1868-53-7	
I-Bromofluorobenzene (S)	100	%.	68-124	1		01/19/17 15:1:		
Foluene-d8 (S)	106	%.	79-119	1		01/19/17 15:1:		



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-111A	Lab ID: 204	8890005	Collected: 01/17/1	7 12:36	Received: 01	/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 20:30)	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 20:30)	
Surrogates								
n-Pentacosane (S)	79	%.	16-137	1	01/19/17 13:07	01/29/17 20:30	629-99-2	
o-Terphenyl (S)	66	%.	10-121	1	01/19/17 13:07	01/29/17 20:30	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 07:24	ļ	
Surrogates								
I-Bromofluorobenzene (S)	94	%.	44-148	1		01/20/17 07:24	1 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	0.0039	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:17	7440-38-2	
Chromium	0.0047	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:17	7440-47-3	
₋ead	0.0017	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:17	7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:17	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	1.5	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:22	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53			
ead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53			
/anadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53			
'470 Mercury		•	470 Preparation Meth			02, 12, 11 1012		
•						04/04/47 40 00	7400.07.0	
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:32	2 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	470 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:57	7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
cenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	83-32-9	
cenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	5 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	5 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	5 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	5 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15			
	ND	ug/L	0.10	1	01/21/17 12:15			
Fluorene		-				01/30/17 23:05		
	ND	ua/l	().1()	1	01/21/1/1/10	U 1/3U/ 17 73 U:	193-39-5	
ndeno(1,2,3-cd)pyrene	ND ND	ug/L ug/l	0.10 0.10	1 1				
Fluorene ndeno(1,2,3-cd)pyrene 2-Methylnaphthalene Naphthalene	ND ND ND	ug/L ug/L ug/L	0.10 0.10 0.10	1 1	01/21/17 12:15 01/21/17 12:15 01/21/17 12:15	01/30/17 23:05	91-57-6	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL CW SAMPLING

Date: 02/14/2017 09:05 AM

Sample: MW-111A	Lab ID: 204	Lab ID: 2048890005		7 12:36	Received: 01	/18/17 14:45 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparati	on Meth	nod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	121	%.	25-150	1		01/30/17 23:05		
Terphenyl-d14 (S)	109	%.	25-150	1	01/21/17 12:15	01/30/17 23:05	1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	ND	ug/L	4.0	1		01/19/17 15:31	67-64-1	
Benzene	ND	ug/L	0.50	1		01/19/17 15:31	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 15:31	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 15:31	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 15:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 15:31		
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 15:31		
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 15:31		
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 15:31		
Chloroethane	ND	ug/L	0.50	1		01/19/17 15:31		
Chloroform	ND ND	ug/L ug/L	0.50	1		01/19/17 15:31		
	ND ND	•	0.50	1		01/19/17 15:31		
Chloromethane		ug/L						
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 15:31		
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 15:31		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 15:31		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 15:31		
,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:31		
,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:31		
,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 15:31	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:31	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 15:31	78-87-5	
sis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:31	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:31	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 15:31	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 15:31	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 15:31		
Methyl acetate	ND	ug/L	2.0	1		01/19/17 15:31		
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 15:31		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 15:31		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 15:31		
Styrene	ND	ug/L	1.0	1		01/19/17 15:31		
,1,2,2-Tetrachloroethane	ND ND	•	0.50	1		01/19/17 15:31		
etrachloroethene	ND ND	ug/L	0.50	1		01/19/17 15:31		
		ug/L						
oluene	ND	ug/L	0.50	1		01/19/17 15:31		
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:31		
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:31		
richloroethene	ND	ug/L	0.50	1		01/19/17 15:31		
richlorofluoromethane	ND	ug/L	0.50	1		01/19/17 15:31		
/inyl chloride	ND	ug/L	0.50	1		01/19/17 15:31	75-01-4	
n&p-Xylene	ND	ug/L	2.0	1		01/19/17 15:31	179601-23-1	



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-111A	Lab ID: 204	18890005	Collected: 01/17/1	7 12:36	Received: 0'	1/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		01/19/17 15:31	95-47-6	
Dibromofluoromethane (S)	96	%.	72-126	1		01/19/17 15:31	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/19/17 15:31		
Foluene-d8 (S)	105	%.	79-119	1		01/19/17 15:31		
Sample: MW-114A	Lab ID: 204	18890006	Collected: 01/17/1	7 16:21	Received: 0°	1/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Met	hod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 21:00)	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		01/29/17 21:00		
n-Pentacosane (S)	17	%.	16-137	1	01/19/17 13:07	01/29/17 21:00	629-99-2	
p-Terphenyl (S)	50	%.	10-121	1	01/19/17 13:07	01/29/17 21:00	84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/20/17 07:51	I	
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/20/17 07:51	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 60	020 Preparation Meth	nod: EP/	A 3010			
Arsenic	0.0051	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7440-38-2	
Chromium	0.024	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7440-47-3	
∟ead	0.012	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7439-92-1	
/anadium	0.041	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:21	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	020 Preparation Meth	nod: EP/	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7440-47-3	
∟ead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:26	3 7440-62-2	
470 Mercury	Analytical Met	hod: EPA 74	470 Preparation Meth	nod: EP/	٦ 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:34	7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 74	470 Preparation Meth	nod: EP/	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:59	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1		01/30/17 23:25		
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	208-96-8	
Anthracene	ND	ug/L	0.10	1		01/30/17 23:25		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	5 56-55-3	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-114A	Lab ID:	2048890006	Collected: 01/17/	17 16:21	Received: 01	/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical	Method: EPA 8	270 by SIM Preparat	ion Meth	od: EPA 3510			
Benzo(a)pyrene	NE	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:29	5 50-32-8	
Benzo(b)fluoranthene	NE) ug/L	0.10	1	01/21/17 12:15	01/30/17 23:29	5 205-99-2	
Benzo(g,h,i)perylene	NE) ug/L	0.10	1	01/21/17 12:15	01/30/17 23:29	5 191-24-2	
Benzo(k)fluoranthene	NE) ug/L	0.10	1	01/21/17 12:15	01/30/17 23:29	5 207-08-9	
Chrysene	NE	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:29	5 218-01-9	
Dibenz(a,h)anthracene	NE	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:29	5 53-70-3	
Fluoranthene	NE		0.10	1	01/21/17 12:15	01/30/17 23:29	5 206-44-0	
Fluorene	NE) ug/L	0.10	1	01/21/17 12:15	01/30/17 23:29	5 86-73-7	
ndeno(1,2,3-cd)pyrene	NE	•	0.10	1	01/21/17 12:15	01/30/17 23:29	5 193-39-5	
2-Methylnaphthalene	NE	Ū	0.10	1	01/21/17 12:15	01/30/17 23:2	5 91-57-6	
Naphthalene	NE	-	0.10	1	01/21/17 12:15			
Phenanthrene	NE	_	0.10	1	01/21/17 12:15			
Pyrene	NE	_	0.10	1	01/21/17 12:15			
Surrogates	145	ug/L	0.10	•	01/21/17 12.10	01/00/17 20:20	7 120 00 0	
2-Fluorobiphenyl (S)	106	6 %.	25-150	1	01/21/17 12:15	01/30/17 23:2	5 321-60-8	
Terphenyl-d14 (S)	107		25-150	1	01/21/17 12:15			
B260 MSV Low Level		Method: EPA 5						
						04/40/47 45 4	07.04.4	00
Acetone	NE	U	4.0	1		01/19/17 15:49		C9
Benzene	NE	J	0.50	1		01/19/17 15:49		
Bromodichloromethane	NE	J	0.50	1		01/19/17 15:49		
Bromoform	NE	J	0.50	1		01/19/17 15:49		
Bromomethane	NE	J	0.50	1		01/19/17 15:49		
2-Butanone (MEK)	NE	J	2.0	1		01/19/17 15:49		
Carbon disulfide	NE	J	1.0	1		01/19/17 15:49		
Carbon tetrachloride	NE	J	0.50	1		01/19/17 15:49		
Chlorobenzene	NE	J	0.50	1		01/19/17 15:49		
Chloroethane	NE	J	0.50	1		01/19/17 15:49		
Chloroform	NE	-	0.50	1		01/19/17 15:49		
Chloromethane	NE	ug/L	0.50	1		01/19/17 15:49	9 74-87-3	
1,2-Dibromo-3-chloropropane	NE) ug/L	0.20	1		01/19/17 15:49	9 96-12-8	
Dibromochloromethane	NE) ug/L	0.50	1		01/19/17 15:49	9 124-48-1	
1,2-Dibromoethane (EDB)	NE) ug/L	1.0	1		01/19/17 15:49	9 106-93-4	
Dichlorodifluoromethane	NE) ug/L	1.0	1		01/19/17 15:49	9 75-71-8	
1,1-Dichloroethane	NE) ug/L	0.50	1		01/19/17 15:49	9 75-34-3	
1,2-Dichloroethane	NE) ug/L	0.50	1		01/19/17 15:49	9 107-06-2	
1,1-Dichloroethene	NE) ug/L	0.50	1		01/19/17 15:49	9 75-35-4	
cis-1,2-Dichloroethene	NE	ug/L	1.0	1		01/19/17 15:49	9 156-59-2	
rans-1,2-Dichloroethene	NE	ug/L	0.50	1		01/19/17 15:49	9 156-60-5	
1,2-Dichloropropane	NE	_	0.50	1		01/19/17 15:49	9 78-87-5	
cis-1,3-Dichloropropene	NE	-	0.50	1		01/19/17 15:49		
rans-1,3-Dichloropropene	NE	J	0.50	1		01/19/17 15:49		
Ethylbenzene	NE	•	0.50	1		01/19/17 15:49		
2-Hexanone	NE	•	1.0	1		01/19/17 15:49		
sopropylbenzene (Cumene)	NE	•	1.0	1		01/19/17 15:49		
Methyl acetate	NE		2.0	1		01/19/17 15:49		
Methylene Chloride	NE NE	_	0.50	1		01/19/17 15:49		



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-114A	Lab ID: 204	8890006	Collected: 01/17/1	7 16:21	Received: 01	/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 15:49	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 15:49	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 15:49	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 15:49	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 15:49	127-18-4	
- oluene	ND	ug/L	0.50	1		01/19/17 15:49	108-88-3	
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:49	71-55-6	
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:49		
richloroethene	ND	ug/L	0.50	1		01/19/17 15:49		
richlorofluoromethane	ND	ug/L	0.50	1		01/19/17 15:49		
/inyl chloride	ND	•	0.50	1		01/19/17 15:49		
•		ug/L						
n&p-Xylene	ND	ug/L	2.0	1			179601-23-1	
-Xylene	ND	ug/L	1.0	1		01/19/17 15:49	95-47-6	
Surrogates	00	0/	70.400			04/40/47 45 46	1000 50 7	
Dibromofluoromethane (S)	96	%.	72-126	1		01/19/17 15:49		
I-Bromofluorobenzene (S)	98	%.	68-124	1		01/19/17 15:49		
oluene-d8 (S)	106	%.	79-119	1		01/19/17 15:49	2037-26-5	
Sample: DUP006	Lab ID: 204	8890007	Collected: 01/17/1	7 00:00	Received: 01	/18/17 14:45	Matrix: Water	
Sample: DUP006 Parameters	Lab ID: 204	8890007 Units	Collected: 01/17/1	7 00:00 DF	Received: 01 Prepared	/18/17 14:45 Analyzed	Matrix: Water CAS No.	Qua
Parameters	Results	Units		DF	Prepared	Analyzed		Qua
Parameters 015M DRO/ORO Organics	Results Analytical Meth	Units	Report Limit	DF ration M	Prepared ethod: EPA 3535	Analyzed	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40)	Results	Units	Report Limit	DF	Prepared	Analyzed 01/29/17 21:31	CAS No.	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates	Results Analytical Methods ND ND	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF ration M 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31	CAS No.	Qu
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S)	Results Analytical Methods ND ND 51	Units nod: EPA 80 mg/L mg/L %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137	DF ration M 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31	CAS No.	Qu
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S)	Results Analytical Methods ND ND	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF ration M 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31	CAS No.	Qu
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S)	Results Analytical Methods ND ND 51	Units mod: EPA 80 mg/L mg/L %. %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31	CAS No.	Qu
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	Results Analytical Methods ND ND 51 51	Units mod: EPA 80 mg/L mg/L %. %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31	CAS No. 629-99-2 84-15-1	Qui
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 1021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates	Analytical Method ND ND 51 51 Analytical Method	Units mod: EPA 80 mg/L mg/L %. %. hod: EPA 80	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021	DF ration M 1 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31	CAS No. 629-99-2 84-15-1	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates -Bromofluorobenzene (S)	Results Analytical Method ND ND 51 51 Analytical Method ND 93	Units mod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0	DF ration M 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31 01/29/17 11:04	CAS No. 629-99-2 84-15-1	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates 1-Bromofluorobenzene (S) 2020 MET ICPMS	Results Analytical Method ND ND 51 51 Analytical Method ND 93	Units mod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148	DF ration M 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31 01/29/17 11:04 01/20/17 11:04	CAS No. 629-99-2 84-15-1	Qui
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 20-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates 1-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic	Results Analytical Method ND ND 51 51 Analytical Method ND 93 Analytical Method	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth	DF ration M 1 1 1 1 1 1 nod: EP/	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31 01/29/17 11:04 01/20/17 11:04	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates I-Pentacosane (S) I-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates I-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium	Results Analytical Method ND ND 51 51 Analytical Method ND 93 Analytical Method ND	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31 01/29/17 11:04 01/20/17 11:04 02/12/17 16:25 02/12/17 16:25	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3	Qu
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Currogates -Pentacosane (S) -Terphenyl (S) 021 GCV BTEX, MTBE, GRO Diasoline Range Organics Currogates -Bromofluorobenzene (S) 020 MET ICPMS Diesenic Chromium ead	Results Analytical Method ND ND 51 51 Analytical Method ND 93 Analytical Method ND 0.049	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31 01/29/17 11:04 01/20/17 11:04 02/12/17 16:25 02/12/17 16:25 02/12/17 16:25	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (S-Pentacosane (S) Dell GCV BTEX, MTBE, GRO Dissoline Range Organics Dirrogates Dirrogates Dirrogates Dirrogates Dirrogates Dirromofluorobenzene (S) Dell MET ICPMS Dirsonic Chromium Dead Direction of the control of the con	Results Analytical Method ND 51 51 Analytical Method ND 93 Analytical Method ND 0.049 ND ND	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/29/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31 01/29/17 11:04 01/20/17 11:04 02/12/17 16:25 02/12/17 16:25 02/12/17 16:25	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	Qu
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates -Bromofluorobenzene (S) 020 MET ICPMS Arsenic Chromium ead d'anadium 020 MET ICPMS, Dissolved (LF)	Results Analytical Method ND 51 51 Analytical Method ND 93 Analytical Method ND 0.049 ND ND	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0010 0.0050	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/29/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31 01/29/17 11:04 01/20/17 11:04 01/20/17 16:25 02/12/17 16:25 02/12/17 16:25	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates -Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium Lead Vanadium 2020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Results Analytical Method ND 51 51 Analytical Method ND 93 Analytical Method ND 0.049 ND ND Analytical Method	Units mod: EPA 80 mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth	DF ration M 1 1 1 1 1 1 1 1 1 nod: EP/	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31 01/29/17 11:04 01/20/17 11:04 01/20/17 16:25 02/12/17 16:25 02/12/17 16:25 02/12/17 16:25	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	Qu
Parameters Parame	Results Analytical Method ND 51 51 Analytical Method ND 93 Analytical Method ND 0.049 ND ND Analytical Method ND	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L od: EPA 60 ug/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth 1.0	DF ration M 1 1 1 1 1 1 1 1 1 nod: EP/ 1 1 1 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31 01/29/17 21:31 01/20/17 11:04 01/20/17 11:04 02/12/17 16:25 02/12/17 16:25 02/12/17 16:25 02/12/17 19:25 02/12/17 19:25	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-62-2 7440-38-2 7440-38-2 7440-47-3	Qu

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL CW SAMPLING

Date: 02/14/2017 09:05 AM

Pace Project No.: 2048890	Latin con	000007	Oallanta (L. 04/47/47	7.00.00	Danabard 01	/40/47 4 4 45	N. A	
Sample: DUP006	Lab ID: 204	8890007	Collected: 01/17/17	7 00:00	Received: 01	/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	od: EPA	٦ 7470			
Mercury	1.8	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:37	7 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	od: EPA	A 7470			
Mercury, Dissolved	0.26	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:0	1 7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparation	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	5 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	5 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	5 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	5 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	5 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15			
Chrysene	ND	ug/L	0.10	1	01/21/17 12:16			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:16			
Fluoranthene	ND	-	0.10	1	01/21/17 12:15			
		ug/L			01/21/17 12:15			
Fluorene	ND	ug/L	0.10	1				
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15			
-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15			
laphthalene	ND	ug/L	0.10	1	01/21/17 12:15			
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15			
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:4	5 129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	111	%.	25-150	1	01/21/17 12:15			
Ferphenyl-d14 (S)	116	%.	25-150	1	01/21/17 12:15	01/30/17 23:4	5 1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
Acetone	7.4	ug/L	4.0	1		01/19/17 16:07	7 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 16:07	7 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 16:07	7 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 16:07	7 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 16:07	7 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 16:07	7 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 16:07	7 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 16:07		
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 16:07		
Chloroethane	ND	ug/L	0.50	1		01/19/17 16:07		
Chloroform	ND	ug/L	0.50	1		01/19/17 16:07		
Chloromethane	ND	ug/L	0.50	1		01/19/17 16:07		
,2-Dibromo-3-chloropropane	ND	ug/L ug/L	0.20	1		01/19/17 16:07		
Dibromochloromethane	ND ND	ug/L ug/L	0.50	1		01/19/17 16:07		
,2-Dibromoethane (EDB)		•		1		01/19/17 16:07	_	
,ב-טוטוסוווספנחמוופ (בטא) Dichlorodifluoromethane	ND ND	ug/L	1.0					
	ND	ug/L	1.0	1		01/19/17 16:07		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:07		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:07	107-06-2	



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: DUP006	Lab ID: 204	8890007	Collected: 01/17/1	17 00:00	Received: 0	1/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:07	7 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 16:07	7 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:07	7 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 16:07	7 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:07	7 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:07	7 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 16:07	7 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 16:07	7 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 16:07	7 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 16:07	7 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 16:07		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 16:07		
Methyl-tert-butyl ether	4.7	ug/L	0.50	1		01/19/17 16:07		
Styrene	ND	ug/L	1.0	1		01/19/17 16:07		
1,1,2,2-Tetrachloroethane	ND ND	ug/L	0.50	1		01/19/17 16:07		
Tetrachloroethene	ND ND	ug/L	0.50	1		01/19/17 16:07		
Toluene	ND ND	ug/L ug/L	0.50	1		01/19/17 16:07		
1,1,1-Trichloroethane	ND ND	-	0.50	1		01/19/17 16:07		
, ,		ug/L						
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:07		
Trichloroethene	0.84	ug/L	0.50	1		01/19/17 16:07		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 16:07		
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 16:07		
m&p-Xylene	ND	ug/L	2.0	1			7 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 16:07	7 95-47-6	
Surrogates	0.4	0.4	70.400			04/40/47 40 0		
Dibromofluoromethane (S)	94	%.	72-126	1		01/19/17 16:07		
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/19/17 16:07		
Toluene-d8 (S)	106	%.	79-119	1		01/19/17 16:07	7 2037-26-5	
Sample: MW-75B2	Lab ID: 204	8890008	Collected: 01/17/1	17 14:50	Received: 0	1/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Metl	hod: EPA 8	015B Modified Prepa	ration M	lethod: EPA 353	 5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 22:02	2	
Oil Range Organics (>C28-C40)	ND ND	mg/L	1.0	1		01/29/17 22:02		
Surrogates	IND	mg/L	1.0	1	51/15/11 15.01	01/20/11 22.02	<u>-</u>	
n-Pentacosane (S)	51	%.	16-137	1	01/19/17 13:07	01/29/17 22:02	2 629-99-2	
o-Terphenyl (S)	56	%.	10-137	1		01/29/17 22:02		
8021 GCV BTEX, MTBE, GRO	Analytical Met				01/15/17 15.07	01/25/17 22:02	2 04 10 1	
, ,	•					04/00/47 44 04	•	
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 11:31	I	
Surrogates	00	0/	44 4 40	4		04/00/47 44 04	1 460 00 4	
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/20/17 11:31	1 400-00-4	



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-75B2	Lab ID:	2048890008	Collected: 01/17/	17 14:50	Received: 01	/18/17 14:45 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical I	Method: EPA 6	020 Preparation Met	hod: EPA	A 3010			
Arsenic	ND) mg/L	0.0010	1	01/24/17 08:30	02/12/17 15:41	7440-38-2	R1
Chromium	0.046	mg/L	0.0010	1	01/24/17 08:30	02/12/17 15:41	7440-47-3	M1,R1
Lead	ND) mg/L	0.0010	1	01/24/17 08:30	02/12/17 15:41	7439-92-1	R1
Vanadium	ND) mg/L	0.0050	1	01/24/17 08:30	02/12/17 15:41	7440-62-2	M1,R1
6020 MET ICPMS, Dissolved (LF)	Analytical I	Method: EPA 6	020 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 18:46	7440-38-2	
Chromium, Dissolved	47.9	ug/L	1.0	1	01/24/17 09:53	02/12/17 18:46	7440-47-3	
₋ead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 18:46	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 18:46	7440-62-2	M1
7470 Mercury	Analytical I	Method: EPA 7	470 Preparation Met	hod: EPA	A 7470			
Mercury	1.9	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:14	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical I	Method: EPA 7	470 Preparation Met	hod: EPA	٦ 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:03	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical I	Method: EPA 8	270 by SIM Prepara	tion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	120-12-7	M1
Benzo(a)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	193-39-5	
2-Methylnaphthalene	ND	-	0.10	1	01/23/17 11:36	01/30/17 19:06	91-57-6	
Naphthalene	ND	_	0.10	1	01/23/17 11:36	01/30/17 19:06	91-20-3	
Phenanthrene	ND	-	0.10	1	01/23/17 11:36	01/30/17 19:06	85-01-8	
Pyrene	ND	0	0.10	1		01/30/17 19:06		
Surrogates		· ·						
2-Fluorobiphenyl (S)	56	%.	25-150	1	01/23/17 11:36	01/30/17 19:06	321-60-8	
Terphenyl-d14 (S)	62	2 %.	25-150	1	01/23/17 11:36	01/30/17 19:06	1718-51-0	
3260 MSV Low Level	Analytical I	Method: EPA 5	030B/8260					
Acetone	ND	ug/L	4.0	1		01/19/17 14:00		C9
Benzene	ND	ug/L	0.50	1		01/19/17 14:00	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 14:00	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 14:00	75-25-2	
Bromomethane	ND	-	0.50	1		01/19/17 14:00	74-83-9	
2-Butanone (MEK)	ND	_	2.0	1		01/19/17 14:00	78-93-3	



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-75B2	Lab ID: 204	8890008	Collected: 01/17/1	7 14:50	Received: ()1/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 14:0	0 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 14:0	0 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 14:0	0 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 14:0	0 75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 14:0	0 67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 14:0	0 74-87-3	
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 14:0	0 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 14:0	0 124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 14:0	0 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 14:0	0 75-71-8	
,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:0	0 75-34-3	
,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:0		
,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:0		
is-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:0		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:0		
,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:0		
is-1,3-Dichloropropene	ND	ug/L	0.50	1			0 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1			0 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:0		
-Hexanone	ND	ug/L	1.0	1		01/19/17 14:0		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:0		
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:0		
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:0		
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 14:0		
Methyl-tert-butyl ether	4.7	ug/L	0.50	1		01/19/17 14:0		
Styrene	ND	ug/L	1.0	1		01/19/17 14:0		M1
,1,2,2-Tetrachloroethane	ND ND	ug/L ug/L	0.50	1		01/19/17 14:0		IVI I
etrachloroethene	ND ND	ug/L	0.50	1		01/19/17 14:0		
oluene	ND ND	ug/L ug/L	0.50	1		01/19/17 14:0		
	ND ND		0.50	1		01/19/17 14:0		
,1,1-Trichloroethane	ND ND	ug/L				01/19/17 14:0		
,1,2-Trichloroethane richloroethene	ND 0.81	ug/L	0.50 0.50	1 1		01/19/17 14:0		
		ug/L						
richlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:0		
/inyl chloride	ND	ug/L	0.50	1		01/19/17 14:0		
n&p-Xylene	ND	ug/L	2.0	1			0 179601-23-1	
-Xylene	ND	ug/L	1.0	1		01/19/17 14:0	υ 95-47-6	
Surrogates	05	0/	70.400	4		04/40/47 44 0	0 4060 50 7	
Dibromofluoromethane (S)	95	%.	72-126	1		01/19/17 14:0		
-Bromofluorobenzene (S)	99	%.	68-124	1		01/19/17 14:0		
Toluene-d8 (S)	107	%.	79-119	1		01/19/17 14:0	u 2037-26-5	



Project: PUMA TERMINAL CW SAMPLING

Date: 02/14/2017 09:05 AM

Sample: FB-011717	Lab ID: 204	2200000	Collected: 01/17/1	7 16:20	Possivod:	01/18/17 14:45	Matrix: Water	
Sample: FB-011717	Lab ID: 2046	8890009	Collected: 01/17/1	7 16:30	Received:	01/18/17 14:45	iviatrix: vvater	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/20/17 13:1	5	
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/20/17 13:1	5 460-00-4	
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	22.0	ug/L	4.0	1		01/19/17 16:2	5 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 16:2	5 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 16:2	5 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 16:2	5 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 16:2	5 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 16:2	5 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 16:2	5 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 16:2	5 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 16:2	5 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 16:2		
Chloroform	2.0	ug/L	0.50	1		01/19/17 16:2		
Chloromethane	ND	ug/L	0.50	1		01/19/17 16:2		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 16:2		
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 16:2		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 16:2		
Dichlorodifluoromethane	ND ND	ug/L	1.0	1		01/19/17 16:2		
1,1-Dichloroethane	ND ND	ug/L ug/L	0.50	1		01/19/17 16:2		
1,2-Dichloroethane	ND ND	-	0.50	1		01/19/17 16:2		
		ug/L						
I,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:25		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 16:2		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:2		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 16:2		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:2		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:2		
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 16:2		
2-Hexanone	ND	ug/L	1.0	1		01/19/17 16:2		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 16:2		
Methyl acetate	ND	ug/L	2.0	1		01/19/17 16:2	5 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 16:2	5 75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 16:2	5 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 16:2	5 1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 16:2	5 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 16:2	5 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 16:2	5 127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 16:2	5 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:2		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:2		
Trichloroethene	ND	ug/L	0.50	1		01/19/17 16:2		
Frichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 16:2		
Vinyl chloride	ND ND	ug/L	0.50	1		01/19/17 16:2		
m&p-Xylene	ND ND	ug/L	2.0	1			5	
o-Xylene	ND ND	ug/L ug/L	1.0	1		01/19/17 16:2		



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: FB-011717	Lab ID: 2	2048890009	Collected: 01/17/1	7 16:30	Received: 0	1/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical N	Method: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	93		72-126	1		01/19/17 16:2		
4-Bromofluorobenzene (S)	98		68-124	1		01/19/17 16:2		
Toluene-d8 (S)	104	%.	79-119	1		01/19/17 16:2	5 2037-26-5	
Sample: MW-63A	Lab ID: 2	2048890010	Collected: 01/18/1	7 10:33	Received: 0	1/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3015M DRO/ORO Organics	Analytical N	Method: EPA 80	015B Modified Prepa	ration M	lethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 23:34	4	
Oil Range Organics (>C28-C40) Surrogates	ND	J	1.0	1		7 01/29/17 23:34		
n-Pentacosane (S)	46	%.	16-137	1	01/19/17 13:07	01/29/17 23:3	4 629-99-2	
p-Terphenyl (S)	45		10-121	1		01/29/17 23:34		
021 GCV BTEX, MTBE, GRO	Analytical N	lethod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/20/17 12:49	9	
4-Bromofluorobenzene (S)	93	%.	44-148	1		01/20/17 12:49	9 460-00-4	
6020 MET ICPMS	Analytical N	flethod: EPA 60	020 Preparation Meth	nod: EP/	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	9 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	9 7440-47-3	
∟ead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	9 7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:29	9 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical N	Method: EPA 60	020 Preparation Meth	nod: EP/	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:3	3 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:3	3 7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:3	3 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	3 02/12/17 19:3	3 7440-62-2	
470 Mercury	Analytical N	Method: EPA 74	470 Preparation Meth	nod: EP/	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:39	9 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical N	Nethod: EPA 74	470 Preparation Meth	nod: EP/	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:10	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical N	Method: EPA 82	270 by SIM Preparati	ion Meth	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:00	6 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1		01/30/17 20:00		
Anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:00	6 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:00	6 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:00	6 50-32-8	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-63A	Lab ID: 204	8890010	Collected: 01/18/1	7 10:33	Received: 01	/18/17 14:45 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	91-57-6	
Naphthalene	ND	ug/L	0.10	1		01/30/17 20:06		
Phenanthrene	ND	ug/L	0.10	1		01/30/17 20:06		
Pyrene	ND	ug/L	0.10	1		01/30/17 20:06		
Surrogates	.,,5	~9, -	3.10	•	2.7.20, 11.00	2.700, 17 20.00	30 0	
2-Fluorobiphenyl (S)	109	%.	25-150	1	01/23/17 11:36	01/30/17 20:06	321-60-8	
Ferphenyl-d14 (S)	110	%.	25-150	1		01/30/17 20:06		
3260 MSV Low Level	Analytical Met				0.7207	0.7007.1.20.00		
				4		04/40/47 46:44	67.64.4	C0
Acetone	4.9	ug/L	4.0	1		01/19/17 16:44		C9
Benzene	ND	ug/L	0.50	1		01/19/17 16:44		
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 16:44	-	
Bromoform	ND	ug/L	0.50	1		01/19/17 16:44		
Bromomethane	ND	ug/L	0.50	1		01/19/17 16:44		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 16:44		
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 16:44		
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 16:44		
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 16:44		
Chloroethane	ND	ug/L	0.50	1		01/19/17 16:44	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 16:44	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 16:44		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 16:44	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 16:44	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 16:44	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 16:44	75-71-8	
,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	75-34-3	
,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	107-06-2	
,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:44	75-35-4	
is-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 16:44	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:44	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 16:44	78-87-5	
is-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:44	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:44		
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 16:44		
2-Hexanone	ND	ug/L	1.0	1		01/19/17 16:44		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 16:44		
Methyl acetate	ND ND	ug/L ug/L	2.0	1		01/19/17 16:44		
Methylene Chloride	ND ND	ug/L	0.50	1		01/19/17 16:44		
4-Methyl-2-pentanone (MIBK)	ND ND	ug/L ug/L	1.0	1		01/19/17 16:44		



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-63A	Lab ID: 2048	8890010	Collected: 01/18/1	17 10:33	Received: 0	1/18/17 14:45	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 16:44	1 1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 16:44	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 16:44	1 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 16:44	1 127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 16:44	1 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	1 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	1 79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 16:44	1 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 16:44	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 16:44	1 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 16:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 16:44	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%.	72-126	1		01/19/17 16:44	1 1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/19/17 16:44	460-00-4	
Toluene-d8 (S)	105	%.	79-119	1		01/19/17 16:44	1 2037-26-5	



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

QC Batch: 72457 Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX , MTBE, GRO

Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,

2048890009, 2048890010

METHOD BLANK: 303500 Matrix: Water

Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,

2048890009, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/20/17 04:20	
4-Bromofluorobenzene (S)	%.	86	44-148	01/20/17 04:20	

LABORATORY CONTROL SAMPLE:	303501					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Gasoline Range Organics	ug/L	500	437	87	61-136	
4-Bromofluorobenzene (S)	%.			90	44-148	

MATRIX SPIKE & MATRIX SPI	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303502				303503							
			MS	MSD								
		2048890008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	475	467	88	86	15-147	2	20	
4-Bromofluorobenzene (S)	%.						97	97	44-148			

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

QC Batch: 72610 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304157 Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Blank Reporting

 Parameter
 Units
 Result
 Limit
 Analyzed
 Qualifiers

 Mercury
 ug/L
 ND
 0.20
 01/24/17 18:10

LABORATORY CONTROL SAMPLE: 304158

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury ug/L 1.0 103 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304159 304160

MS MSD 2048890008 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual 1 2.6 2.6 77 75-125 0 20 Mercury ug/L 1.9 1 77

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

QC Batch: 72612 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304161 Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury, Dissolved ug/L ND 0.20 01/24/17 18:41

LABORATORY CONTROL SAMPLE: 304162

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury, Dissolved ug/L 1.0 103 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304163 304164

MS MSD 2048890008 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Mercury, Dissolved ND 1 75-125 20 ug/L 1 1.1 1.1 91 90

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

QC Batch: 72609 Analysis Method: EPA 6020 QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304153 Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Blank Reporting Parameter Result Limit Qualifiers Units Analyzed Arsenic mg/L ND 0.0010 02/12/17 12:56 Chromium mg/L ND 0.0010 02/12/17 12:56 Lead ND mg/L 0.0010 02/12/17 12:56 Vanadium ND 0.0050 02/12/17 12:56 mg/L

LABORATORY CONTROL SAMPLE:

Date: 02/14/2017 09:05 AM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	84-115	
Vanadium	mg/L	.02	0.016	82	81-115	

MATRIX SPIKE & MATRIX S	SPIKE DUPLIC	CATE: 30415	5 MS	MSD	304156							
Parameter	Units	2048890008 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	.02	.02	0.016	0.020	80	101	80-120	23	20	R1
Chromium	mg/L	0.046	.02	.02	0.058	0.074	57	136	80-120	24	20	M1,R1
Lead	mg/L	ND	.02	.02	0.017	0.021	83	107	80-120	25	20	R1
Vanadium	mg/L	ND	.02	.02	0.0097	0.014	49	70	80-120	35	20	M1,R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

QC Batch: 72614 Analysis Method: EPA 6020

QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304165 Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Chromium, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Lead, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Vanadium, Dissolved	ug/L	ND	5.0	02/12/17 13:20	

LABORATORY CONTROL SAMPLE: 304166 LCS Spike LCS % Rec Parameter Conc. Result % Rec Limits Qualifiers Units Arsenic. Dissolved 20 20.6 103 80-120 ug/L Chromium, Dissolved ug/L 20 20.6 103 80-120 Lead, Dissolved ug/L 20 20.2 101 80-120 Vanadium, Dissolved ug/L 20 18.4 92 80-120

MATRIX SPIKE & MATRIX SP	ATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304167 304168											
			MS	MSD								
		2048890008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic, Dissolved	ug/L	ND	20	20	19.5	19.5	96	97	75-125	0	20	
Chromium, Dissolved	ug/L	47.9	20	20	67.5	68.0	98	100	75-125	1	20	
Lead, Dissolved	ug/L	ND	20	20	20.3	20.6	102	103	75-125	2	20	
Vanadium, Dissolved	ug/L	ND	20	20	12.4	12.2	62	61	75-125	2	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

QC Batch: 72436 Analysis Method: EPA 5030B/8260 QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level

2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, Associated Lab Samples:

2048890009, 2048890010

METHOD BLANK: 303413 Matrix: Water

Associated Lab Samples:

2048890009, 2048890010

	1 Inita	Blank	Reporting Limit	Applyand	Qualifiers
Parameter	Units	Result		Analyzed	
1,1,1-Trichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1-Dichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1-Dichloroethene	ug/L	ND	0.50	01/19/17 11:18	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/19/17 11:18	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/19/17 11:18	
1,2-Dichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,2-Dichloropropane	ug/L	ND	0.50	01/19/17 11:18	
2-Butanone (MEK)	ug/L	ND	2.0	01/19/17 11:18	
2-Hexanone	ug/L	ND	1.0	01/19/17 11:18	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/19/17 11:18	
Acetone	ug/L	ND	4.0	01/19/17 11:18	
Benzene	ug/L	ND	0.50	01/19/17 11:18	
Bromodichloromethane	ug/L	ND	0.50	01/19/17 11:18	
Bromoform	ug/L	ND	0.50	01/19/17 11:18	
Bromomethane	ug/L	ND	0.50	01/19/17 11:18	
Carbon disulfide	ug/L	ND	1.0	01/19/17 11:18	
Carbon tetrachloride	ug/L	ND	0.50	01/19/17 11:18	
Chlorobenzene	ug/L	ND	0.50	01/19/17 11:18	
Chloroethane	ug/L	ND	0.50	01/19/17 11:18	
Chloroform	ug/L	ND	0.50	01/19/17 11:18	
Chloromethane	ug/L	ND	0.50	01/19/17 11:18	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/19/17 11:18	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/19/17 11:18	
Dibromochloromethane	ug/L	ND	0.50	01/19/17 11:18	
Dichlorodifluoromethane	ug/L	ND	1.0	01/19/17 11:18	
Ethylbenzene	ug/L	ND	0.50	01/19/17 11:18	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/19/17 11:18	
m&p-Xylene	ug/L	ND	2.0	01/19/17 11:18	
Methyl acetate	ug/L	ND	2.0	01/19/17 11:18	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/19/17 11:18	
Methylene Chloride	ug/L	ND	0.50	01/19/17 11:18	
o-Xylene	ug/L	ND	1.0	01/19/17 11:18	
Styrene	ug/L	ND	1.0	01/19/17 11:18	
Tetrachloroethene	ug/L	ND	0.50	01/19/17 11:18	
Toluene	ug/L	ND	0.50	01/19/17 11:18	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/19/17 11:18	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/19/17 11:18	
Trichloroethene	ug/L	ND	0.50	01/19/17 11:18	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

METHOD BLANK: 303413 Matrix: Water

Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,

2048890009, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	01/19/17 11:18	
Vinyl chloride	ug/L	ND	0.50	01/19/17 11:18	
4-Bromofluorobenzene (S)	%.	99	68-124	01/19/17 11:18	
Dibromofluoromethane (S)	%.	98	72-126	01/19/17 11:18	
Toluene-d8 (S)	%.	107	79-119	01/19/17 11:18	

LABORATORY CONTROL SAMPLE	: 303414					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L		44.6	89	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	42.6	85	15-179	
1,1,2-Trichloroethane	ug/L	50	45.5	91	58-144	
1,1-Dichloroethane	ug/L	50	43.8	88	63-129	
1,1-Dichloroethene	ug/L	50	43.5	87	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	49.1	98	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.6	93	52-161	
1,2-Dichloroethane	ug/L	50	45.1	90	57-148	
1,2-Dichloropropane	ug/L	50	45.3	91	66-128	
2-Butanone (MEK)	ug/L	50	45.0	90	32-183	
2-Hexanone	ug/L	50	40.7	81	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.5	87	26-171	
Acetone	ug/L	50	44.1	88	22-165	
Benzene	ug/L	50	41.2	82	62-131	
Bromodichloromethane	ug/L	50	46.9	94	69-132	
Bromoform	ug/L	50	45.6	91	35-166	
Bromomethane	ug/L	50	64.0	128	34-158	
Carbon disulfide	ug/L	50	50.4	101	31-128	
Carbon tetrachloride	ug/L	50	47.6	95	54-144	
Chlorobenzene	ug/L	50	50.8	102	70-127	
Chloroethane	ug/L	50	71.6	143	17-195	
Chloroform	ug/L	50	44.4	89	73-134	
Chloromethane	ug/L	50	37.4	75	17-153	
cis-1,2-Dichloroethene	ug/L	50	43.4	87	68-129	
cis-1,3-Dichloropropene	ug/L	50	46.8	94	72-138	
Dibromochloromethane	ug/L	50	46.0	92	49-146	
Dichlorodifluoromethane	ug/L	50	45.4	91	10-179	
Ethylbenzene	ug/L	50	46.5	93	66-126	
Isopropylbenzene (Cumene)	ug/L	50	43.4	87	51-138	
m&p-Xylene	ug/L	100	92.3	92	65-129	
Methyl acetate	ug/L	50	45.7	91	20-142	
Methyl-tert-butyl ether	ug/L	50	46.9	94	37-166	
Methylene Chloride	ug/L	50	48.8	98	46-168	
o-Xylene	ug/L	50	44.4	89	65-124	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL CW SAMPLING

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LABORATORY CONTROL SAMPLE:	303414					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Styrene	ug/L	50	48.4	97	72-133	
etrachloroethene	ug/L	50	47.9	96	46-157	
oluene	ug/L	50	46.6	93	69-126	
ans-1,2-Dichloroethene	ug/L	50	43.4	87	60-129	
ans-1,3-Dichloropropene	ug/L	50	47.8	96	59-149	
chloroethene	ug/L	50	46.8	94	67-132	
chlorofluoromethane	ug/L	50	62.2	124	39-171	
yl chloride	ug/L	50	54.9	110	27-149	
Bromofluorobenzene (S)	%.			98	68-124	
romofluoromethane (S)	%.			98	72-126	
uene-d8 (S)	%.			104	79-119	

MATRIX SPIKE & MATRIX SP	IKE DUPLICA	ATE: 30341	5		303416							
Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
1,1,1-Trichloroethane	ug/L		50	50	49.5	49.0	99	98	54-137	1	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.5	43.2	85	86	15-187	2	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	46.0	45.2	92	90	59-148	2	20	
1,1-Dichloroethane	ug/L	ND	50	50	46.5	45.5	93	91	59-133	2	20	
1,1-Dichloroethene	ug/L	ND	50	50	46.3	45.1	93	90	44-146	3	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	47.8	48.3	96	97	23-166	1	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	47.5	46.8	95	94	55-166	2	20	
1,2-Dichloroethane	ug/L	ND	50	50	46.2	45.8	92	92	56-154	1	20	
1,2-Dichloropropane	ug/L	ND	50	50	47.6	46.7	95	93	62-135	2	20	
2-Butanone (MEK)	ug/L	ND	50	50	44.9	45.0	90	90	20-205	0	20	
2-Hexanone	ug/L	ND	50	50	40.4	39.7	81	79	25-189	2	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	41.6	41.1	83	82	23-184	1	20	
Acetone	ug/L	ND	50	50	48.3	47.2	93	91	11-217	2	20	
Benzene	ug/L	ND	50	50	44.5	43.4	89	87	52-141	2	20	
Bromodichloromethane	ug/L	ND	50	50	49.5	49.3	99	99	70-134	0	20	
Bromoform	ug/L	ND	50	50	46.4	46.0	93	92	37-171	1	20	
Bromomethane	ug/L	ND	50	50	69.3	66.5	139	133	34-155	4	20	
Carbon disulfide	ug/L	ND	50	50	58.3	54.5	117	109	28-130	7	20	
Carbon tetrachloride	ug/L	ND	50	50	52.3	51.3	105	103	48-146	2	20	
Chlorobenzene	ug/L	ND	50	50	53.8	53.2	108	106	67-129	1	20	
Chloroethane	ug/L	ND	50	50	80.3	77.0	161	154	12-192	4	20	
Chloroform	ug/L	ND	50	50	47.0	46.5	94	93	66-143	1	20	
Chloromethane	ug/L	ND	50	50	37.6	39.1	75	78	14-155	4	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	46.6	45.2	93	90	56-141	3	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	49.3	48.5	99	97	70-139	2	20	
Dibromochloromethane	ug/L	ND	50	50	47.1	46.8	94	94	50-150	1	20	
Dichlorodifluoromethane	ug/L	ND	50	50	46.2	45.3	92	91	10-173	2	20	
Ethylbenzene	ug/L	ND	50	50	50.4	49.2	101	98	57-135	2	20	

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Project: PUMA TERMINAL CW SAMPLING

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Date: 02/14/2017 09:05 AM

MATRIX SPIKE & MATRIX SPIR	KE DUPLIC	CATE: 30341	5 MS	MSD	303416							
		2048890008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Isopropylbenzene (Cumene)	ug/L	ND	50	50	46.4	47.1	93	94	40-146	1	20	
m&p-Xylene	ug/L	ND	100	100	99.3	97.2	99	97	56-136	2	20	
Methyl acetate	ug/L	ND	50	50	44.2	45.2	88	90	10-142	2	20	
Methyl-tert-butyl ether	ug/L	4.7	50	50	51.6	51.5	94	94	35-176	0	20	
Methylene Chloride	ug/L	ND	50	50	50.8	49.1	102	98	45-166	3	20	
o-Xylene	ug/L	ND	50	50	47.0	46.7	94	93	57-133	1	20	
Styrene	ug/L	ND	50	50	16.7	14.4	33	29	58-144	15	20	M1
Tetrachloroethene	ug/L	ND	50	50	52.2	50.9	104	102	48-143	2	20	
Toluene	ug/L	ND	50	50	50.6	49.7	101	99	59-136	2	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	47.4	45.4	95	91	57-132	4	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	49.4	48.1	99	96	59-154	3	20	
Trichloroethene	ug/L	0.81	50	50	52.6	50.8	104	100	58-140	3	20	
Trichlorofluoromethane	ug/L	ND	50	50	70.9	68.4	142	137	24-175	4	20	
Vinyl chloride	ug/L	ND	50	50	60.2	56.2	120	112	21-150	7	20	
4-Bromofluorobenzene (S)	%.						97	100	68-124			
Dibromofluoromethane (S)	%.						100	100	72-126			
Toluene-d8 (S)	%.						105	105	79-119			

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

QC Batch: 72438 Analysis Method: EPA 8015B Modified QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 303428 Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/29/17 17:56	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/29/17 17:56	
n-Pentacosane (S)	%.	54	16-137	01/29/17 17:56	
o-Terphenyl (S)	%.	65	10-121	01/29/17 17:56	

LABORATORY CONTROL SAMPLE: 303429 LCS LCS Spike % Rec Parameter Conc. Result % Rec Limits Qualifiers Units Diesel Range Organic (C10-C28) mg/L .4 .16J 39 10-115 n-Pentacosane (S) 47 16-137 %. o-Terphenyl (S) %. 61 10-121

MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 30343	0		303431							
			MS	MSD								
		2048890008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.8	.8	0.51	.43J	48	39	10-122		20	
n-Pentacosane (S)	%.						65	48	16-137			
o-Terphenyl (S)	%.						69	53	10-121			

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

 QC Batch:
 72547
 Analysis Method:
 EPA 8270 by SIM

 QC Batch Method:
 EPA 3510
 Analysis Description:
 8270 Water by SIM MSSV

 Associated Lab Samples:
 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007

METHOD BLANK: 303977 Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/30/17 15:27	
Acenaphthene	ug/L	ND	0.10	01/30/17 15:27	
Acenaphthylene	ug/L	ND	0.10	01/30/17 15:27	
Anthracene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(a)anthracene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(a)pyrene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
Chrysene	ug/L	ND	0.10	01/30/17 15:27	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/30/17 15:27	
Fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
Fluorene	ug/L	ND	0.10	01/30/17 15:27	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/30/17 15:27	
Naphthalene	ug/L	ND	0.10	01/30/17 15:27	
Phenanthrene	ug/L	ND	0.10	01/30/17 15:27	
Pyrene	ug/L	ND	0.10	01/30/17 15:27	
2-Fluorobiphenyl (S)	%.	108	25-150	01/30/17 15:27	
Terphenyl-d14 (S)	%.	121	25-150	01/30/17 15:27	

LABORATORY CONTROL SAMPLE:	303978					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L		4.6	116	35-150	
Acenaphthene	ug/L	4	4.1	101	35-150	
Acenaphthylene	ug/L	4	4.0	101	35-150	
Anthracene	ug/L	4	5.2	129	35-150	
Benzo(a)anthracene	ug/L	4	4.1	102	35-150	
Benzo(a)pyrene	ug/L	4	3.8	96	35-150	
Benzo(b)fluoranthene	ug/L	4	3.9	98	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.3	108	35-150	
Benzo(k)fluoranthene	ug/L	4	3.7	93	35-150	
Chrysene	ug/L	4	3.9	99	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.3	107	35-150	
Fluoranthene	ug/L	4	4.1	103	35-150	
Fluorene	ug/L	4	4.1	102	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.3	108	35-150	
Naphthalene	ug/L	4	3.9	98	35-150	
Phenanthrene	ug/L	4	4.2	105	35-150	
Pyrene	ug/L	4	4.0	101	35-150	

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

LABORATORY CONTROL SAMPLE: 303978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S) Terphenyl-d14 (S)	%. %.			104 101	25-150 25-150	

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

QC Batch: 72592 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2048890008, 2048890010

METHOD BLANK: 304106 Matrix: Water

Associated Lab Samples: 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/30/17 16:07	
Acenaphthene	ug/L	ND	0.10	01/30/17 16:07	
Acenaphthylene	ug/L	ND	0.10	01/30/17 16:07	
Anthracene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(a)anthracene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(a)pyrene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/30/17 16:07	
Chrysene	ug/L	ND	0.10	01/30/17 16:07	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/30/17 16:07	
Fluoranthene	ug/L	ND	0.10	01/30/17 16:07	
Fluorene	ug/L	ND	0.10	01/30/17 16:07	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/30/17 16:07	
Naphthalene	ug/L	ND	0.10	01/30/17 16:07	
Phenanthrene	ug/L	ND	0.10	01/30/17 16:07	
Pyrene	ug/L	ND	0.10	01/30/17 16:07	
2-Fluorobiphenyl (S)	%.	77	25-150	01/30/17 16:07	
Terphenyl-d14 (S)	%.	81	25-150	01/30/17 16:07	

LABORATORY CONTROL SAMPLE:	304107					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L		3.6	90	35-150	
Acenaphthene	ug/L	4	3.3	82	35-150	
Acenaphthylene	ug/L	4	3.1	79	35-150	
Anthracene	ug/L	4	4.2	105	35-150	
Benzo(a)anthracene	ug/L	4	3.3	84	35-150	
Benzo(a)pyrene	ug/L	4	3.3	81	35-150	
Benzo(b)fluoranthene	ug/L	4	3.5	88	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.3	82	35-150	
Benzo(k)fluoranthene	ug/L	4	3.5	87	35-150	
Chrysene	ug/L	4	3.4	86	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.3	83	35-150	
Fluoranthene	ug/L	4	3.4	85	35-150	
Fluorene	ug/L	4	3.3	83	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.3	83	35-150	
Naphthalene	ug/L	4	3.1	78	35-150	
Phenanthrene	ug/L	4	3.5	86	35-150	
Pyrene	ug/L	4	3.4	86	35-150	

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Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

LABORATORY CONTROL SAMPLE: 304107

LABORATORT CONTROL SAMPLE.	304107	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			100	25-150	
Terphenyl-d14 (S)	%.			103	25-150	

MATRIX SPIKE & MATRIX SI	PIKE DUPLICA	ATE: 30410	8		304109							
			MS	MSD								
		2048890008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
2-Methylnaphthalene	ug/L	ND ND	4	4	5.2	5.0	131	125	35-150	4	20	
Acenaphthene	ug/L	ND	4	4	4.9	4.9	122	122	35-150	0	20	
Acenaphthylene	ug/L	ND	4	4	4.7	4.7	117	117	35-150	0	20	
Anthracene	ug/L	ND	4	4	6.5	6.8	162	171	35-150	5	20	M1
Benzo(a)anthracene	ug/L	ND	4	4	5.2	5.5	130	139	35-150	6	20	
Benzo(a)pyrene	ug/L	ND	4	4	5.0	5.3	124	132	35-150	6	20	
Benzo(b)fluoranthene	ug/L	ND	4	4	5.4	5.7	135	142	35-150	5	20	
Benzo(g,h,i)perylene	ug/L	ND	4	4	5.1	5.2	129	130	35-150	1	20	
Benzo(k)fluoranthene	ug/L	ND	4	4	5.2	5.7	129	142	35-150	9	20	
Chrysene	ug/L	ND	4	4	5.2	5.5	131	138	35-150	5	20	
Dibenz(a,h)anthracene	ug/L	ND	4	4	5.1	5.2	129	130	35-150	1	20	
Fluoranthene	ug/L	ND	4	4	5.3	5.6	132	140	35-150	6	20	
Fluorene	ug/L	ND	4	4	4.9	5.0	123	124	35-150	1	20	
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	5.1	5.2	128	130	35-150	2	20	
Naphthalene	ug/L	ND	4	4	4.6	4.3	114	106	35-150	7	20	
Phenanthrene	ug/L	ND	4	4	5.3	5.5	132	139	35-150	5	20	
Pyrene	ug/L	ND	4	4	5.2	5.7	129	141	35-150	9	20	
2-Fluorobiphenyl (S)	%.						124	119	25-150		20	
Terphenyl-d14 (S)	%.						127	137	25-150		20	

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QUALIFIERS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72701

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

Date: 02/14/2017 09:05 AM

C9 Common Laboratory Contaminant.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
048890002	EB-011717	EPA 3535	72438	EPA 8015B Modified	72991
048890003	MW-110AB	EPA 3535	72438	EPA 8015B Modified	72991
048890004	MW-110B2	EPA 3535	72438	EPA 8015B Modified	72991
048890005	MW-111A	EPA 3535	72438	EPA 8015B Modified	72991
48890006	MW-114A	EPA 3535	72438	EPA 8015B Modified	72991
048890007	DUP006	EPA 3535	72438	EPA 8015B Modified	72991
48890008	MW-75B2	EPA 3535	72438	EPA 8015B Modified	72991
048890010	MW-63A	EPA 3535	72438	EPA 8015B Modified	72991
148890001	TB-011717	EPA 8015/8021	72457		
048890002	EB-011717	EPA 8015/8021	72457		
48890003	MW-110AB	EPA 8015/8021	72457		
48890004	MW-110B2	EPA 8015/8021	72457		
48890005	MW-111A	EPA 8015/8021	72457		
48890006	MW-114A	EPA 8015/8021	72457		
48890007	DUP006	EPA 8015/8021	72457		
48890008	MW-75B2	EPA 8015/8021	72457		
48890009	FB-011717	EPA 8015/8021	72457		
)48890010	MW-63A	EPA 8015/8021	72457		
048890002	EB-011717	EPA 3010	72609	EPA 6020	72692
48890003	MW-110AB	EPA 3010	72609	EPA 6020	72692
48890004	MW-110B2	EPA 3010	72609	EPA 6020	72692
48890005	MW-111A	EPA 3010	72609	EPA 6020	72692
48890006	MW-114A	EPA 3010	72609	EPA 6020	72692
48890007	DUP006	EPA 3010	72609	EPA 6020	72692
048890008	MW-75B2	EPA 3010	72609	EPA 6020	72692
48890010	MW-63A	EPA 3010	72609	EPA 6020	72692
048890002	EB-011717	EPA 3005A	72614	EPA 6020	72700
48890003	MW-110AB	EPA 3005A	72614	EPA 6020	72700
48890004	MW-110B2	EPA 3005A	72614	EPA 6020	72700
48890005	MW-111A	EPA 3005A	72614	EPA 6020	72700
48890006	MW-114A	EPA 3005A	72614	EPA 6020	72700
48890007	DUP006	EPA 3005A	72614	EPA 6020	72700
48890008	MW-75B2	EPA 3005A	72614	EPA 6020	72700
048890010	MW-63A	EPA 3005A	72614	EPA 6020	72700
148890002	EB-011717	EPA 7470	72610	EPA 7470	72698
048890003	MW-110AB	EPA 7470	72610	EPA 7470	72698
048890004	MW-110B2	EPA 7470	72610	EPA 7470	72698
48890005	MW-111A	EPA 7470	72610	EPA 7470	72698
48890006	MW-114A	EPA 7470	72610	EPA 7470	72698
48890007	DUP006	EPA 7470	72610	EPA 7470	72698
48890008	MW-75B2	EPA 7470	72610	EPA 7470	72698
48890010	MW-63A	EPA 7470	72610	EPA 7470	72698
048890002	EB-011717	EPA 7470	72612	EPA 7470	72699
048890003	MW-110AB	EPA 7470	72612	EPA 7470	72699
148890004	MW-110B2	EPA 7470	72612	EPA 7470	72699
048890005	MW-111A	EPA 7470	72612	EPA 7470	72699



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048890006	MW-114A	EPA 7470	72612	EPA 7470	72699
2048890007	DUP006	EPA 7470	72612	EPA 7470	72699
2048890008	MW-75B2	EPA 7470	72612	EPA 7470	72699
2048890010	MW-63A	EPA 7470	72612	EPA 7470	72699
2048890002	EB-011717	EPA 3510	72547	EPA 8270 by SIM	72701
2048890003	MW-110AB	EPA 3510	72547	EPA 8270 by SIM	72701
2048890004	MW-110B2	EPA 3510	72547	EPA 8270 by SIM	72701
2048890005	MW-111A	EPA 3510	72547	EPA 8270 by SIM	72701
2048890006	MW-114A	EPA 3510	72547	EPA 8270 by SIM	72701
2048890007	DUP006	EPA 3510	72547	EPA 8270 by SIM	72701
2048890008	MW-75B2	EPA 3510	72592	EPA 8270 by SIM	72702
2048890010	MW-63A	EPA 3510	72592	EPA 8270 by SIM	72702
2048890001	TB-011717	EPA 5030B/8260	72436		
2048890002	EB-011717	EPA 5030B/8260	72436		
2048890003	MW-110AB	EPA 5030B/8260	72436		
2048890004	MW-110B2	EPA 5030B/8260	72436		
2048890005	MW-111A	EPA 5030B/8260	72436		
2048890006	MW-114A	EPA 5030B/8260	72436		
2048890007	DUP006	EPA 5030B/8260	72436		
2048890008	MW-75B2	EPA 5030B/8260	72436		
2048890009	FB-011717	EPA 5030B/8260	72436		
2048890010	MW-63A	EPA 5030B/8260	72436		



WO#: 2048890

Y / Analytical Request Document

OCUMENT. All relevant fields must be completed accurately.

www.pacelabs.com						Page: / of	
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	Kedn		ormation:		- I	20752	73 l
パープスタッ	ラナケー	Carly (E)			Forest words of the course of the		
Address: Atiview place suite 4018)	Сору Та:		Company Name:		REGULATORY AGEN	CY	
165 Km 1,2 Commos P.R			Address:		NPDES GR	OUND WATER TO DRINK	ING WATER
Email To:	Purchase Order No.:		Pace Quote Reference:		T UST T RCF	RA L OTHER	₹
Phone: 11-4000 Fax: - 717-4046 F	Project Name:	malad CW say	Pace Project Manager:	m Redond	Site Location		
Requested Due Date/TAT:	Project Number:	4 204	Pace Profile #:	757	STATE:	<u>.R.</u>	
0,100			- У	Requested	d Analysis Filtered (Y/N		
Section D Matrix Co	des 😑 🙃			ntives >			
Required Client Information MATRIX / C		COLLECTED	Preserva	itives >			
Water	WT 8 5 COMPO	SITE COMPOSITE	COLLECTION			sidual Chlorine (Y/N)	$\neg \cap$
Waste Water Product	WW P STAR STAR STAR STAR STAR STAR STAR STAR	T END/GRAB		1	্বিট্ৰ	Residual Chlorine (Y/N)	$_{\triangle}$ \vee \vee I
Sample ID Sai/Solid	Sr (see)		원 왕	Na ₂ S ₂ O ₃ Na ₂ S ₂ O ₃ Methanol Other VC くろん LCO くろい	Merculy Merculy Merculy		90' I
(A-Z, 0-9 / ,-) VVIDE	vvr lut l		sawple Temp AT CC # OF CONTAINERS Unpreserved H ₂ SO ₄ HNO ₃	\$\frac{3}{43.60}\$	위 원기)
Sample IDs MUST BE UNIQUE Tissue Other	OT IOIFI		# OF CONTAIN # OF CONTAIN # DF SO ₄ HNO ₃ HO HO HO HO HO HO HO HO HO HO HO HO HO H		ا ا الْأَكْلِيمَاهِ		
ITEM #	SAMPLE	i	# OF COUNTY OF C	MacS203 Methanol Other VCCS MCCS	25 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		
 ≝ .	Mare Mare	TIME DATE TIME	8 # <u>무</u> 포 도 도 도 도 도 도 도 도 도	Na ₂ S ₂ Naetha Other Other VCC	n 4 a	Pace Project	l No./ Lab I.D.
16 TB - 00010	74 C-	sifish LAB	4 4	XX			
2 EB-011917	37 O-	0,1111) 0946	10 5 14	K K K	ダイン		
3 MW-11DAB	ین کرا	क्रीगीम १०वर	10 2 14		メと		-
4 MW - 110 BZ	3.77 0-	01/11/M 1138	105 14		$\langle \times \times - - - - - - - -$		
5 MW-111 A	w; o	01/0/10 1236	105 17				
6 MW - 75B2	WT U	9/11/11 1450	105 114		***		
7 DUPOOB	iv o	9/1/19	105 14	XXXX	***		
8 MW-15B2 (MS)	WT 0-	\$1010 145H	10 5 14		XXX		
0 MW- 75BZ (MSD)	127 CU	p:/n/n 1450	105 14		* * *		
110 June - 114A	WT 0	57/1/10 1620	10 S 14		4x x		
11 FB-9197)	~r 0	01/11/10 1630	4 4	MM			
12 MW-63A	WY (26)	51/K/N 1933	105 114		<u> </u>		
ADDITIONAL COMMENTS	RELINQUISHED BY	AFFILIATION DATE	TIME	ACCEPTED BY / AFFILIATION	DATE TIME	SAMPLE CONE	NTIONS
Level TV	And-Colon /	Arcords pilali	1415	1 Dr have	2 1-1817 14:4	5 1.3	
	2	- /pre 1-19-1	17 17 W	PIE O	102		1
		1101	7 0830 >	na W	14917 083		1/1
	ted !	<i>p</i> 1717	1 0030 (Toce	71717 1003		17-
P		<u> </u>				127 /	+'
ORIGINAL SAMPLER NAME AN PRINT Name SIGNATURE SIGNATURE						d on the color of	Intac
						Temp in °C Received on Ice (Y/N) Custody Sealed Cooler	Seldi
if 56	SIGNATURE of SAMPI	LER: (I)	DATE Signe (MM/DD/YY)	の / (を) / (の)	Sea Sea	Samples Intact	

Pace Analytical*

Sample Condition Upon Receipt

WO#: 2048890

PM: JAR1

Due Date: 02/01/17

CLIENT: 98-ARCADISPR

Urb. Jardines de Guaynabo
Calle Mrginal Blq A-10
Guaynabo, PR 00969

Project #:

Courier: Pace Courier Hired Courier	rrier □ Fed X □ UI	PS □ DHL	☐ USPS ☐ Customer ☐ Other
Custody Seal on Cooler/Box Present:	[see COC]		Custody Seals intact: □Yes □No
Therm Fisher IR 4 Therm Fisher IR 6 Therm Fisher IR 7	Type of Ice:	Vet Blue None	Samples on ice: [see COC]
Cooler Temperature: [see COC]	Temp should be above f	reezing to 6°C	Date and Initials of person examining contents:
emp must be measured from Temperature blank v	when present	Comments:	
Cemperature Blank Present"?	□Yes DNd □N/A	1	/
Chain of Custody Present:	ZY98 □No □N/A	2	
Chain of Custody Complete:	DY96 □N0 □N/A	3	
Chain of Custody Relinquished:	□yes □No □N/A	4	
Sampler Name & Signature on COC:	□Y9€ □No □N/A	5	
amples Arrived within Hold Time:	□yés □No □N/A	6	
ufficient Volume:	□Yes □No □N/A	7	
Correct Containers Used:	☐Yes ☐No ☐N/A	8	
iltered vol. Rec. for Diss. tests	□Yes □No □N/A	9	
sample Labels match COC:	ØYes □No □N/A	10	
Il containers received within manafacture's recautionary and/or expiration dates.	Yes 🗆 No 🗀 N/A	11	
Il containers needing chemical preservation f een checked (except VOA, coliform, & O&G).		12	
all containers preservation checked found to be ompliance with EPA recommendation.	pe in □Yes □No □N/A		oreserative added? □Yes □No cord lot no.: HNO3 H2SO4
leadspace in VOA Vials (>6mm):	□Yes □No ☑N/A	14	
rip Blank Present:	□Yes ☑Mo	15	
Client Notification/ Resolution:			
erson Contacted:			Date/Time:
Comments/ Resolution:			



Sample Condition Upon Receipt

Pace Analytical	1000 Riverbend, Blvd., Suite F St. Rose, LA 70087		Project #:	20
Courier: Pace Courier	☐ Hired Courier →	Fed X □ U	PS □ DHL	☐ USPS ☐ Customer ☐ Other
Custody Seal on Cooler/Box Pr	resent: [see CC	DC]		Custody Seals intact: ☐Yes ☐No
Therometer	sher IR 6 T	ype of Ice:	Wet Blue None	Samples on ice: [see COC]
Cooler Temperature: [see C	OC] Temp	should be above	freezing to 6°C	Date and Initials of person examining contents:
Temp must be measured from Tem	perature blank when pre	sent	Comments:	
Temperature Blank Present"?		⊇Yes □No ZIN/A	1	
Chain of Custody Present:	 علي	⊒res □no □n/A	2	
Chain of Custody Complete:		ZYes □No □N/A	3	
Chain of Custody Relinquished:	غر	Yes □No □N/A	4	
Sampler Name & Signature on	COC:	Yes □No □N/A	5	
Samples Arrived within Hold Tin	ne: 1	Yes No N/A	6 .	
Sufficient Volume:	Į.	Yes DNo DN/A	7	
Correct Containers Used:		Yes □No □N/A	8	
Filtered vol. Rec. for Diss. tests		∃Yes □No ØN/A	9	
Sample Labels match COC:	عر	Yes □No □N/A	10	
All containers received within maprecautionary and/or expiration	_	Yes □No □N/A	11	
All containers needing chemical been checked (except VOA, coli		Yes □No □N/A	12	
All containers preservation chec compliance with EPA recommer		Yes □No □N/A		eserative added? □Yes □No ord lot no.: HNO3 H2SO4
Headspace in VOA Vials (>6mr	n): \Box]Yes ZNo □N/A	14	
Trip Blank Present:	7	ÎYes □No	15	
Client Notification/ Resolution	1:			
Person Contacted:				Date/Time:
Comments/ Resolution:	4	·	· · · · · · · · · · · · · · · · · · ·	
	<u> </u>	····		
	,, <u>.</u>			
	**			





February 15, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 12, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

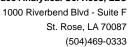
Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048681001	TB-011217	Water	01/12/17 00:00	01/12/17 15:48
2048681002	EB-011217	Water	01/12/17 08:20	01/12/17 15:48
2048681003	MW-76B2	Water	01/12/17 09:41	01/12/17 15:48
2048681004	MW-76A	Water	01/12/17 10:35	01/12/17 15:48
2048681005	MW-13A	Water	01/12/17 12:45	01/12/17 15:48
2048681006	MW-13B2	Water	01/12/17 13:46	01/12/17 15:48
2048681007	MW-37A	Water	01/12/17 14:38	01/12/17 15:48
2048681008	FB-011217	Water	01/12/17 14:48	01/12/17 15:48



SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048681001	TB-011217	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681002	EB-011217	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048681003	MW-76B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048681004	MW-76A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048681005	MW-13A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048681006	MW-13B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681007	MW-37A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681008	FB-011217	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N



PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72198

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.



PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

8 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 6020

Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Batch Comments:

Insufficient sample volume to perform MS/MSD analyses.

QC Batch: 72356



PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 7470
Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72204

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

8 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 72210

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 302518)
 - Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72210

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048748001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 302519)
 - Carbon disulfide
- MSD (Lab ID: 302520)
 - Carbon disulfide

R1: RPD value was outside control limits.

- MSD (Lab ID: 302520)
 - Bromomethane
 - Carbon disulfide



PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method:EPA 5030B/8260Description:8260 MSV Low LevelClient:BBL Caribe / Arcadis PRDate:February 15, 2017

QC Batch: 72210

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048748001

R1: RPD value was outside control limits.

Chloroethane

Additional Comments:

Analyte Comments:

QC Batch: 72210

C9: Common Laboratory Contaminant.

- EB-011217 (Lab ID: 2048681002)
 - Acetone
- FB-011217 (Lab ID: 2048681008)
 - Acetone
- MW-13A (Lab ID: 2048681005)
 - Acetone
- MW-13B2 (Lab ID: 2048681006)
 - Acetone
- MW-76A (Lab ID: 2048681004)
 - Acetone
- MW-76B2 (Lab ID: 2048681003)
 - Acetone
- TB-011217 (Lab ID: 2048681001)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.



Project: PUMA TERMINAL MS SAMPLING

Date: 02/15/2017 12:15 PM

Sample: TB-011217	Lab ID: 204	8681001	Collected: 01/12/1	17 00:00	Received:	01/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/18/17 21:00)	
4-Bromofluorobenzene (S)	98	%.	44-148	1		01/18/17 21:00	460-00-4	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	22.2	ug/L	4.0	1		01/17/17 15:50	0 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 15:50	71-43-2	
Bromodichloromethane	0.67	ug/L	0.50	1		01/17/17 15:50	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 15:50	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 15:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 15:50	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 15:50	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 15:50	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 15:50	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 15:50		
Chloroform	3.4	ug/L	0.50	1		01/17/17 15:50	0 67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 15:50		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 15:50		
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 15:50		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 15:50	_	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 15:50		
,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 15:50		
,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 15:50		
,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 15:50		
sis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 15:50		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 15:50		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 15:50		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 15:50		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 15:50		
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 15:50		
2-Hexanone	ND	ug/L	1.0	1		01/17/17 15:50		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 15:50		
	ND ND	•	2.0	1		01/17/17 15:50		
Methyl acetate Methylene Chloride	ND ND	ug/L	0.50	1		01/17/17 15:50		
•	ND ND	ug/L	1.0	1				
-Methyl-2-pentanone (MIBK)		ug/L		•		01/17/17 15:50 01/17/17 15:50		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 15:50		
Styrene	ND	ug/L	1.0	1				
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 15:50		
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 15:50		
Toluene	ND	ug/L	0.50	1		01/17/17 15:50		
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 15:50		
I,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 15:50		
Trichloroethene	ND	ug/L	0.50	1		01/17/17 15:50		
Frichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 15:50		
/inyl chloride	ND	ug/L	0.50	1		01/17/17 15:50		
n&p-Xylene	ND	ug/L	2.0	1) 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 15:50	95-47-6	



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: TB-011217	Lab ID: 204	8681001	Collected: 01/12/1	7 00:00	Received: 0	1/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	107	%.	72-126	1		01/17/17 15:50		
4-Bromofluorobenzene (S)	95	%.	68-124	1		01/17/17 15:50		
oluene-d8 (S)	99	%.	79-119	1		01/17/17 15:50	0 2037-26-5	
Sample: EB-011217	Lab ID: 204	8681002	Collected: 01/12/1	7 08:20	Received: 0	1/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 16:3	5	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/18/17 16:3		
Surrogates		-						
n-Pentacosane (S)	57	%.	16-137	1	01/17/17 09:23	01/18/17 16:3	5 629-99-2	
-Terphenyl (S)	58	%.	10-121	1	01/17/17 09:23	01/18/17 16:3	5 84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/18/17 21:2	7	
-Bromofluorobenzene (S)	97	%.	44-148	1		01/18/17 21:2	7 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:03	3 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:03	3 7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:03	3 7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:03	3 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
rsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:28	3 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:28	3 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:28	3 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:28	3 7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:06	6 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:1	5 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:3	5 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:3	5 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:3	5 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:3	5 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:3	5 50-32-8	



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: EB-011217	Lab ID: 204	48681002	Collected: 01/12/1	7 08:20	Received: 01	/12/17 15:48 N	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Me	thod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1		01/17/17 20:35		
Naphthalene	ND	ug/L	0.10	1		01/17/17 20:35		
Phenanthrene	ND	ug/L	0.10	1		01/17/17 20:35		
Pyrene	ND	ug/L	0.10	1		01/17/17 20:35		
Surrogates	140	ug/L	0.10	•	51/11/11 10.10	01/11/11 20.00	.20 00 0	
2-Fluorobiphenyl (S)	76	%.	25-150	1	01/17/17 10:16	01/17/17 20:35	321-60-8	
Ferphenyl-d14 (S)	76	%.	25-150	1		01/17/17 20:35		
3260 MSV Low Level	Analytical Me			•	01/11/11 10:10	01/11/11 20.00	1110010	
	-			4		04/47/47 46:00	67.64.4	C 0
Acetone	16.0	ug/L	4.0	1		01/17/17 16:08		C9
Benzene	ND	ug/L	0.50	1		01/17/17 16:08		
Bromodichloromethane	1.1	ug/L	0.50	1		01/17/17 16:08	_	
Bromoform	ND	ug/L	0.50	1		01/17/17 16:08		
Bromomethane	ND	ug/L	0.50	1		01/17/17 16:08		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 16:08		
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 16:08		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 16:08		
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 16:08	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 16:08	75-00-3	
Chloroform	4.8	ug/L	0.50	1		01/17/17 16:08	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 16:08	74-87-3	
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 16:08	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 16:08	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 16:08	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 16:08	75-71-8	
,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:08	75-34-3	
,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:08	107-06-2	
,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:08	75-35-4	
is-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 16:08	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:08	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 16:08		
sis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:08		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:08		
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 16:08		
2-Hexanone	ND	ug/L	1.0	1		01/17/17 16:08		
sopropylbenzene (Cumene)	ND ND	ug/L ug/L	1.0	1		01/17/17 16:08		
Methyl acetate	ND ND	-	2.0	1		01/17/17 16:08		
nemovi acerate	טא	ug/L						
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 16:08	75 00 0	



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: EB-011217	Lab ID: 204	8681002	Collected: 01/12/1	17 08:20	Received: 01	/12/17 15:48 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	30B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 16:08	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 16:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 16:08	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 16:08	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 16:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:08		
Trichloroethene	ND	ug/L	0.50	1		01/17/17 16:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 16:08		
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 16:08		
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 16:08		
o-Xylene	ND ND	ug/L	1.0	1		01/17/17 16:08		
Surrogates	ND	ug/L	1.0	ı		01/11/11 10.00	33 47 0	
Dibromofluoromethane (S)	109	%.	72-126	1		01/17/17 16:08	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/17/17 16:08		
Toluene-d8 (S)	100	%.	79-119	1		01/17/17 16:08		
10.00.00 0.0 (0)		70.		·		0.7.1.7.1. 10.00	200. 20 0	
Sample: MW-76B2	Lab ID: 2048	8681003	Collected: 01/12/1	17 09:41	Received: 01	/12/17 15:48 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration M	ethod: EPA 3535	5	_	
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:03		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/18/17 17:03		
Surrogates	ND	g/ L	1.0	•	01/17/17 00:20	01/10/17 17:00		
n-Pentacosane (S)	50	%.	16-137	1	01/17/17 09:23	01/18/17 17:03	629-99-2	
o-Terphenyl (S)	50	%.	10-121	1		01/18/17 17:03		
8021 GCV BTEX, MTBE, GRO	Analytical Meth			·	0.7.1.7.1. 00.20	0.7.107.1.		
Gasoline Range Organics	ND	ug/L	50.0	1		01/18/17 23:42		
Surrogates	ND	ug/L	30.0	•		01/10/11 20.42		
4-Bromofluorobenzene (S)	98	%.	44-148	1		01/18/17 23:42	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Met	hod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:23	7440-38-2	
Chromium	ND	mg/L	0.0010	1		02/11/17 14:23		
Lead	ND	mg/L	0.0010	1		02/11/17 14:23		
Vanadium	ND	mg/L	0.0050	1		02/11/17 14:23		
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Metl	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:32	7440-38-2	
Chromium, Dissolved	ND ND	•	1.0	1		02/11/17 13:32 02/11/17 13:32		
•		ug/L						
Lead, Dissolved	ND	ug/L	1.0	1		02/11/17 13:32		
variaulum, Dissolved	ND	ug/L	5.0	ı	01/16/1/ 10:15	02/11/17 13:32	1440-02-2	
Vanadium, Dissolved	ND	ug/L	5.0	1		02/11/17 13:32 02/11/17 13:32		



Project: PUMA TERMINAL MS SAMPLING

Date: 02/15/2017 12:15 PM

Sample: MW-76B2	Lab ID: 204	8681003	Collected: 01/12/17	7 09:41	Received: 01	/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Metho	od: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:13	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Metho	od: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:18	3 7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparation	n Meth	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	5 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	5 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	5 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	5 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16			
Chrysene	ND ND	-	0.10	1	01/17/17 10:16			
•	ND ND	ug/L	0.10	1	01/17/17 10:16			
Dibenz(a,h)anthracene Fluoranthene		ug/L			01/17/17 10:16			
	ND	ug/L	0.10	1				
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16			
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16			
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16			
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	5 85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	5 129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%.	25-150	1	01/17/17 10:16			
Terphenyl-d14 (S)	88	%.	25-150	1	01/17/17 10:16	01/17/17 20:55	5 1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
Acetone	5.7	ug/L	4.0	1		01/17/17 16:26	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 16:26	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 16:26	5 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 16:26	5 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 16:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 16:26	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 16:26	6 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 16:26		
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 16:26		
Chloroethane	ND	ug/L	0.50	1		01/17/17 16:26		
Chloroform	ND	ug/L	0.50	1		01/17/17 16:26		
Chloromethane	ND	ug/L	0.50	1		01/17/17 16:26		
1,2-Dibromo-3-chloropropane	ND ND	ug/L ug/L	0.20	1		01/17/17 16:26		
		_						
Dibromochloromethane	ND ND	ug/L	0.50	1		01/17/17 16:26		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 16:26		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 16:26		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:26		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:26	5 107-06-2	



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: MW-76B2	Lab ID: 204	8681003	Collected: 01/12/1	7 09:41	Received: 01	I/12/17 15:48 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Metl	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:26	5 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 16:26	5 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 16:26	8 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:26	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 16:26	6 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 16:26	5 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 16:26	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 16:26	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 16:26		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 16:26		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 16:26		
Styrene	ND	ug/L	1.0	1		01/17/17 16:26		
1,1,2,2-Tetrachloroethane	ND ND	ug/L	0.50	1		01/17/17 16:26		
Tetrachloroethene	ND ND	ug/L	0.50	1		01/17/17 16:26		
Toluene	ND ND	ug/L ug/L	0.50	1		01/17/17 16:26	-	
1,1,1-Trichloroethane	ND ND	-	0.50	1		01/17/17 16:26		
, ,		ug/L				01/17/17 16:26		
1,1,2-Trichloroethane	ND	ug/L	0.50	1				
Trichloroethene	ND	ug/L	0.50	1		01/17/17 16:26		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 16:26		
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 16:26		
m&p-Xylene	ND	ug/L	2.0	1			5 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 16:26	95-47-6	
Surrogates	440	0.4	70.400			04/47/47 40 00	4000 50 7	
Dibromofluoromethane (S)	110	%.	72-126	1		01/17/17 16:26		
4-Bromofluorobenzene (S)	95	%.	68-124	1		01/17/17 16:26		
Toluene-d8 (S)	101	%.	79-119	1		01/17/17 16:26	5 2037-26-5	
Sample: MW-76A	Lab ID: 204	8681004	Collected: 01/12/1	7 10:35	Received: 01	I/12/17 15:48 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Metl	nod: EPA 80	D15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:31	I	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/18/17 17:31		
Surrogates		· 3 ' –		,				
n-Pentacosane (S)	43	%.	16-137	1	01/17/17 09:23	01/18/17 17:31	629-99-2	
o-Terphenyl (S)	45	%.	10-121	1		01/18/17 17:31		
8021 GCV BTEX, MTBE, GRO	Analytical Meth							
Gasoline Range Organics	ND	ug/L	50.0	1		01/19/17 00:09	9	
Surrogates	115	~9 [,] =	55.0	•		2.7.10,17.00.00	=	



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: MW-76A	Lab ID: 2048	3681004	Collected: 01/12/1	7 10:35	Received: 01	/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Met	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:27	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56			
.ead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:27	7439-92-1	
/anadium	0.0060	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:27	7440-62-2	
020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Met	nod: EPA	3005A			
rsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:36	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:36	7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:36	7439-92-1	
anadium, Dissolved	5.8	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:36	7440-62-2	
470 Mercury	Analytical Meth	od: EPA 74	470 Preparation Met	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:15	7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	470 Preparation Met	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:20	7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
cenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 83-32-9	
cenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 208-96-8	
nthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	120-12-7	
enzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 56-55-3	
enzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 50-32-8	
enzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 205-99-2	
enzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 191-24-2	
enzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 207-08-9	
hrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 218-01-9	
ibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 53-70-3	
luoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 206-44-0	
luorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 193-39-5	
-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 91-57-6	
laphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 91-20-3	
henanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 85-01-8	
yrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	5 129-00-0	
Surrogates -Fluorobiphenyl (S)	65	%.	25-150	1	01/17/17 10:16	01/17/17 21:1	5 321-60-8	
erphenyl-d14 (S)	68	%.	25-150	1	01/17/17 10:16			
260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
acetone	7.6	ug/L	4.0	1		01/17/17 16:44	1 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 16:44	1 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 16:44	1 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 16:44		
Bromomethane	ND	ug/L	0.50	1		01/17/17 16:44		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 16:44		

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: MW-76A	Lab ID: 204	8681004	Collected: 01/12/1	7 10:35	Received: (01/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 16:44	4 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 16:44	4 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 16:44	1 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 16:44	4 75-00-3	
Chloroform	ND	ug/L	0.50	1		01/17/17 16:44	4 67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 16:44	4 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 16:44	4 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 16:44	1 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 16:44	1 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 16:44	4 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:44	4 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:44	1 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:44	4 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 16:44	1 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:44	1 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 16:44	4 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:44	1 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:44		
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 16:44	1 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 16:44		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 16:44	4 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 16:44	1 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 16:44	4 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 16:44	1 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 16:44		
Styrene	ND	ug/L	1.0	1		01/17/17 16:44	1 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 16:44	1 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 16:44	1 127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 16:44	1 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:44	4 71-55-6	
I,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:44		
Frichloroethene	ND	ug/L	0.50	1		01/17/17 16:44		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 16:44		
/inyl chloride	ND	ug/L	0.50	1		01/17/17 16:44		
m&p-Xylene	ND	ug/L	2.0	1			. 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 16:4		
Surrogates	110	~g/ -	1.0	•		3.,,11		
Dibromofluoromethane (S)	108	%.	72-126	1		01/17/17 16:44	1868-53-7	
1-Bromofluorobenzene (S)	97	%.	68-124	1		01/17/17 16:44		
Toluene-d8 (S)	101	%.	79-119	1		01/17/17 16:44		



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: MW-13A	Lab ID: 204	8681005	Collected: 01/12/1	7 12:45	Received: 01	/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepar	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:59)	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 17:59	9	
Surrogates								
n-Pentacosane (S)	57	%.	16-137	1	01/17/17 09:23			
o-Terphenyl (S)	57	%.	10-121	1	01/17/17 09:23	01/18/17 17:59	9 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	78.7	ug/L	50.0	1		01/19/17 00:36	5	
Surrogates	07	0/	44.440			04/40/47 00 0		
4-Bromofluorobenzene (S)	97	%.	44-148	1		01/19/17 00:36	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	od: EPA	A 3010			
Arsenic	0.0057	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7440-47-3	
∟ead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:31	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	od: EPA	A 3005A			
Arsenic, Dissolved	1.6	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:40	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:40	7440-47-3	
∟ead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:40	7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:40	7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	od: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:17	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	od: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:26	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:3	5 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:3	5 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:3	5 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:3	5 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:3	5 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:3	5 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16			
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16			
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16			
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16			
-	ND	ug/L	0.10	1	01/17/17 10:16			
ndeno(1,2,3-cd)pyrene								
		-				01/17/17 21:34		
ndeno(1,2,3-cd)pyrene 2-Methylnaphthalene Naphthalene	ND ND	ug/L ug/L	0.10 0.10	1	01/17/17 10:16 01/17/17 10:16		91-57-6	



Project: PUMA TERMINAL MS SAMPLING

Date: 02/15/2017 12:15 PM

Sample: MW-13A	Lab ID: 2048	8681005	Collected: 01/12/1	7 12:45	Received: 01	/12/17 15:48 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	25-150	1		01/17/17 21:35		
Terphenyl-d14 (S)	73	%.	25-150	1	01/17/17 10:16	01/17/17 21:35	1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	12.2	ug/L	4.0	1		01/17/17 17:01	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 17:01	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 17:01	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 17:01	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:01		
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:01		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:01		
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:01		
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:01		
Chloroform	ND	ug/L	0.50	1		01/17/17 17:01		
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:01		
,2-Dibromo-3-chloropropane	ND ND	ug/L	0.20	1		01/17/17 17:01		
Dibromochloromethane	ND ND	•	0.20	1		01/17/17 17:01		
		ug/L						
I,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:01		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:01		
,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:01		
,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:01		
,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:01		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:01		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:01		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:01		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:01	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:01	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:01	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:01	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:01	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 17:01	75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:01		
Methyl-tert-butyl ether	1.9	ug/L	0.50	1		01/17/17 17:01	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 17:01	100-42-5	
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:01	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:01		
oluene	ND	ug/L	0.50	1		01/17/17 17:01		
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:01		
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:01		
richloroethene	ND ND	ug/L	0.50	1		01/17/17 17:01		
Trichlorofluoromethane	ND ND	ug/L ug/L	0.50	1		01/17/17 17:01		
/inyl chloride	ND ND		0.50	1		01/17/17 17:01		
m&p-Xylene	ND ND	ug/L ug/L	2.0	1			179601-23-1	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: MW-13A	Lab ID: 20	48681005	Collected: 01/12/1	17 12:45	Received: 0	1/12/17 15:48	Matrix: Water	er		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual		
3260 MSV Low Level	Analytical Me	ethod: EPA 50	030B/8260							
o-Xylene Surrogates	ND	ug/L	1.0	1		01/17/17 17:01	95-47-6			
Dibromofluoromethane (S)	110	%.	72-126	1		01/17/17 17:01	I 1868-53-7			
4-Bromofluorobenzene (S)	94	%.	68-124	1		01/17/17 17:0				
Toluene-d8 (S)	99	%.	79-119	1		01/17/17 17:01				
Sample: MW-13B2	Lab ID: 20	48681006	Collected: 01/12/1	17 13:46	Received: 0	1/12/17 15:48	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua		
8015M DRO/ORO Organics	Analytical Me	ethod: EPA 8	015B Modified Prepa	ration M	ethod: EPA 353	5	•			
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	3 01/18/17 18:27	7			
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		3 01/18/17 18:27				
n-Pentacosane (S)	52	%.	16-137	1	01/17/17 09:23	3 01/18/17 18:27	629-99-2			
p-Terphenyl (S)	56	%.	10-121	1	01/17/17 09:23	3 01/18/17 18:27	7 84-15-1			
021 GCV BTEX, MTBE, GRO	Analytical Me	ethod: EPA 80	015/8021							
Gasoline Range Organics Surrogates	500	ug/L	50.0	1		01/19/17 01:03	3			
4-Bromofluorobenzene (S)	104	%.	44-148	1		01/19/17 01:03	3 460-00-4			
6020 MET ICPMS	Analytical Me	ethod: EPA 6	020 Preparation Met	hod: EPA	A 3010					
Arsenic	0.0049	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7440-38-2			
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7440-47-3			
∟ead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7439-92-1			
/anadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:35	7440-62-2			
6020 MET ICPMS, Dissolved (LF)	Analytical Me	ethod: EPA 6	020 Preparation Met	hod: EPA	A 3005A					
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	3 7440-38-2			
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	3 7440-47-3			
_ead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	7439-92-1			
/anadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:43	3 7440-62-2			
470 Mercury	Analytical Me	ethod: EPA 7	470 Preparation Met	hod: EPA	A 7470					
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:20	7439-97-6			
7470 Mercury, Dissolved (LF)	Analytical Me	ethod: EPA 7	470 Preparation Met	hod: EPA	A 7470					
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:29	7439-97-6			
270 MSSV PAH by SIM SEP	Analytical Me	ethod: EPA 8	270 by SIM Preparat	ion Meth	od: EPA 3510					
Acenaphthene	0.16	ug/L	0.10	1		01/17/17 21:54				
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	1 208-96-8			
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	120-12-7			
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	1 56-55-3			



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: MW-13B2	Lab ID: 204	8681006	Collected: 01/12/1	7 13:46	Received: 01	/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparati	ion Meth	od: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	4 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	1 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	1 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	1 207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	1 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	4 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	1 206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	4 86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	1 193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	4 91-57-6	
Naphthalene	0.24	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	4 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	4 85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16			
Surrogates		3						
2-Fluorobiphenyl (S)	78	%.	25-150	1	01/17/17 10:16	01/17/17 21:54	4 321-60-8	
Terphenyl-d14 (S)	81	%.	25-150	1	01/17/17 10:16	01/17/17 21:54	1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	10.3	ug/L	4.0	1		01/17/17 17:19	9 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 17:19		00
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 17:19		
Bromoform	ND	ug/L	0.50	1		01/17/17 17:19		
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:19		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:19		
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:19		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:19		
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:19		
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:19		
Chloroform	ND	ug/L	0.50	1		01/17/17 17:19		
Chloromethane	ND ND	ug/L	0.50	1		01/17/17 17:19		
,2-Dibromo-3-chloropropane	ND ND	ug/L	0.20	1		01/17/17 17:19		
Dibromochloromethane	ND ND	•	0.50	1		01/17/17 17:19		
,2-Dibromoethane (EDB)	ND ND	ug/L		1		01/17/17 17:19	-	
Dichlorodifluoromethane		ug/L	1.0	1				
	ND ND	ug/L	1.0 0.50	1		01/17/17 17:19 01/17/17 17:19		
,1-Dichloroethane ,2-Dichloroethane		ug/L						
•	ND	ug/L	0.50	1		01/17/17 17:19		
,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:19		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:19		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:19		
,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:19		
sis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:19		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:19		
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:19		
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:19		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:19		
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:19		
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 17:19	75-09-2	



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: MW-13B2	Lab ID: 2048	3681006	Collected: 01/12/1	7 13:46	Received: 01	/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:19	108-10-1	
Methyl-tert-butyl ether	14.5	ug/L	0.50	1		01/17/17 17:19	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 17:19	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:19	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:19	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 17:19	108-88-3	
,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:19	71-55-6	
,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:19	79-00-5	
richloroethene	ND	ug/L	0.50	1		01/17/17 17:19	79-01-6	
Frichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:19		
/inyl chloride	ND	ug/L	0.50	1		01/17/17 17:19		
n&p-Xylene	ND	ug/L	2.0	1			179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 17:19		
Surrogates	110	ug/ =	1.0			01/11/11 11:10	00 11 0	
Dibromofluoromethane (S)	108	%.	72-126	1		01/17/17 17:19	1868-53-7	
I-Bromofluorobenzene (S)	100	%.	68-124	1		01/17/17 17:19		
oluene-d8 (S)	99	%.	79-119	1		01/17/17 17:19		
Sample: MW-37A	Lab ID: 204	3681007	Collected: 01/12/1	7 14:38	Received: 01	/12/17 15:48	Matrix: Water	
Sample: MW-37A Parameters	Lab ID: 204	3681007 Units	Collected: 01/12/1	7 14:38 DF	Received: 01 Prepared	/12/17 15:48 Analyzed	Matrix: Water CAS No.	Qua
Parameters	Results	Units		DF	Prepared	Analyzed		Qua
Parameters 0015M DRO/ORO Organics	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40)	Results Analytical Meth	Units nod: EPA 80	Report Limit	DF ration M	Prepared ethod: EPA 3535	Analyzed 01/18/17 18:55	CAS No.	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates	Results Analytical Meth	Units nod: EPA 80 mg/L	Report Limit	DF ration M	Prepared ethod: EPA 3535	Analyzed 01/18/17 18:55 01/18/17 18:55	CAS No.	Qu
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Currogates -Pentacosane (S)	Analytical Meth	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF ration M 1 1	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23	Analyzed 01/18/17 18:55 01/18/17 18:55	CAS No.	Qu
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S)	Analytical Methods ND 48	Units nod: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	Analyzed 01/18/17 18:55 01/18/17 18:55	CAS No.	Qu
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	Analytical Methods ND 48 54	Units nod: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	Analyzed 01/18/17 18:55 01/18/17 18:55	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	Analytical Methods O.94 ND 48 54 Analytical Methods	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021	DF ration M 1 1 1	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	Analyzed 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55	CAS No.	Qui
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S)	Results Analytical Methods 0.94 ND 48 54 Analytical Methods 1740 112	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0	DF ration M 1 1 1 1 1	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	Analyzed 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 01:30	CAS No.	Qua
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 1021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 1020 MET ICPMS	Results Analytical Methods 0.94 ND 48 54 Analytical Methods 1740 112	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148	DF ration M 1 1 1 1 1	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	Analyzed 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 01:30 01/19/17 01:30	CAS No. 6 629-99-2 6 84-15-1	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates 1-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic	Analytical Meth 0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth	DF ration M 1 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	Analyzed 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 01:30 01/19/17 01:30	CAS No. 6 629-99-2 6 84-15-1 9 460-00-4 6 7440-38-2	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates -Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium	Analytical Meth 0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth 0.0014	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L	Report Limit	DF ration M 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	Analyzed 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 01:30 01/19/17 01:30 02/11/17 14:38 02/11/17 14:38	CAS No. 6 6 6 6 6 6 6 6 6 7 7 6 7 7 7 7 7 7 7	Qui
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates -Bromofluorobenzene (S) 020 MET ICPMS Arsenic Chromium ead	Analytical Methodology Analytical Methodology 48 54 Analytical Methodology 1740 112 Analytical Methodology 0.0014 ND	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	Analyzed 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 01:30 01/19/17 01:30 01/19/17 14:38 02/11/17 14:38 02/11/17 14:38	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3 7439-92-1	Qu
Parameters 1015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (S) Dil COV BTEX, MTBE, GRO Dissoline Range Organics Dissoline Range Or	Analytical Methology Analytical Methology 48 54 Analytical Methology 1740 112 Analytical Methology 0.0014 ND ND ND ND	Units mg/L mg/L %. nod: EPA 86 ug/L %. nod: EPA 66 mg/L mg/L mg/L mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56	Analyzed 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 01:30 01/19/17 01:30 01/19/17 14:38 02/11/17 14:38 02/11/17 14:38	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3 7439-92-1	Qu
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates D-Bromofluorobenzene (S) 8020 MET ICPMS Arsenic Chromium Lead Vanadium 8020 MET ICPMS, Dissolved (LF)	Analytical Methology Analytical Methology 48 54 Analytical Methology 1740 112 Analytical Methology ND ND ND ND Analytical Methology Analytical	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth	DF ration M 1 1 1 1 1 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56	Analyzed 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 01:30 01/19/17 01:30 01/19/17 14:38 02/11/17 14:38 02/11/17 14:38	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3 7439-92-1 7440-62-2	Qui
Parameters B015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Basoline Range Organics Surrogates B-Bromofluorobenzene (S) B020 MET ICPMS Arsenic Chromium Lead Janadium B020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Results Analytical Methology 0.94 ND 48 54 Analytical Methology 1740 112 Analytical Methology ND ND ND Analytical Methology ND Analytical Methology ND	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60 ug/L	Report Limit 0.15B Modified Preparation 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methors 0.0010 0.0010 0.0050 0.20 Preparation Methors 1.0	DF ration M 1 1 1 1 1 1 1 1 1 nod: EPA 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56	Analyzed 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/19/17 01:30 01/19/17 01:30 02/11/17 14:38 02/11/17 14:38 02/11/17 14:38	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2	Qui
Parameters Bo15M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) Bo21 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates B-Bromofluorobenzene (S) B-Terphenyl (S) Bo20 MET ICPMS Arsenic Chromium Lead Vanadium Bo20 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved Lead, Dissolved	Analytical Methology Analytical Methology 48 54 Analytical Methology 1740 112 Analytical Methology ND ND ND ND Analytical Methology Analytical	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth	DF ration M 1 1 1 1 1 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56	Analyzed 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/19/17 01:30 01/19/17 01:30 02/11/17 14:38 02/11/17 14:38 02/11/17 14:38 02/11/17 13:16 02/11/17 13:16	CAS No. 6 629-99-2 6 84-15-1 7440-38-2 7440-47-3 7440-62-2 7440-38-2 7440-38-2 7440-47-3	Qui



Project: PUMA TERMINAL MS SAMPLING

Date: 02/15/2017 12:15 PM

Pace Project No.: 2048681								
Sample: MW-37A	Lab ID: 2048	8681007	Collected: 01/12/17	7 14:38	Received: 01	//12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Metho	od: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:2	2 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Metho	od: EPA	٦ 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:3	1 7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparation	n Meth	od: EPA 3510			
Acenaphthene	0.53	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:1	4 83-32-9	
Acenaphthylene	0.15	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:1	4 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:1	4 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:1	4 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:1	4 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16			
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16			
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16			
Fluorene	0.45	ug/L	0.10	1	01/17/17 10:16			
	0.43 ND	•	0.10	1	01/17/17 10:16			
Indeno(1,2,3-cd)pyrene		ug/L		1	01/17/17 10:16			
2-Methylnaphthalene	33.9	ug/L	0.10					
Naphthalene	41.4	ug/L	1.0	10	01/17/17 10:16			
Phenanthrene	0.20	ug/L	0.10	1	01/17/17 10:16			
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:1	4 129-00-0	
Surrogates	74	0/	25 450	4	04/47/47 40:46	04/47/47 00:4	4 224 60 0	
2-Fluorobiphenyl (S)	71	%.	25-150	1	01/17/17 10:16			
2-Fluorobiphenyl (S)	48	%.	25-150	10	01/17/17 10:16			
Terphenyl-d14 (S)	71	%.	25-150	1	01/17/17 10:16			
Terphenyl-d14 (S)	54	%.	25-150	10	01/17/17 10:16	01/18/17 10:5	3 1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
Acetone	ND	ug/L	4.0	1		01/17/17 17:3	7 67-64-1	
Benzene	2.3	ug/L	0.50	1		01/17/17 17:3	7 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 17:3	7 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 17:3	7 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:3	7 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:3	7 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:3	7 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:3		
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:3		
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:3		
Chloroform	ND	ug/L	0.50	1		01/17/17 17:3		
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:3		
1,2-Dibromo-3-chloropropane	ND ND	ug/L ug/L	0.30	1		01/17/17 17:3		
Dibromochloromethane	ND ND	•	0.50			01/17/17 17:3		
		ug/L		1				
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:3		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:3	/ /5-/1-8	



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: MW-37A	Lab ID: 204	8681007	Collected: 01/12/1	7 14:38	Received: ()1/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:3	7 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:3	7 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:3	7 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:3	7 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:3	7 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:3	7 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:3	7 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:3	7 10061-02-6	
Ethylbenzene	17.9	ug/L	0.50	1		01/17/17 17:3		
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:3		
Isopropylbenzene (Cumene)	7.9	ug/L	1.0	1		01/17/17 17:3		
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:3		
Methylene Chloride	0.54	ug/L	0.50	1		01/17/17 17:3		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:3		
Methyl-tert-butyl ether	1.2	ug/L	0.50	1		01/17/17 17:3		
Styrene	ND	ug/L	1.0	1		01/17/17 17:3		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:3		
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:3		
Toluene	0.69	ug/L	0.50	1		01/17/17 17:3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:3		
1,1,2-Trichloroethane	ND ND	ug/L	0.50	1		01/17/17 17:3		
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:3		
Trichlorofluoromethane	ND ND	ug/L	0.50	1		01/17/17 17:3		
Vinyl chloride	ND ND	ug/L	0.50	1		01/17/17 17:3		
	40.3	_	2.0	1			7	
m&p-Xylene	40.3 2.7	ug/L	1.0	1				
o-Xylene Surrogates	2.1	ug/L	1.0	I		01/17/17 17:3	7 95-47-6	
Dibromofluoromethane (S)	108	%.	72-126	1		01/17/17 17:3	7 1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/17/17 17:3		
Toluene-d8 (S)	102	%.	79-119	1		01/17/17 17:3		
Toluene-uo (3)	102	/0.	79-119	'		01/11/11 11.3	7 2037-20-3	
Sample: FB-011217	Lab ID: 2048	8681008	Collected: 01/12/1	7 14:48	Received: ()1/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/19/17 01:5	7	
4-Bromofluorobenzene (S)	98	%.	44-148	1		01/19/17 01:5	7 460-00-4	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	11.8	ug/L	4.0	1		01/17/17 17:5	5 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 17:5		
Bromodichloromethane	1.2	ug/L	0.50	1		01/17/17 17:5		
Diomodicilorometrane		· · · · · ·	0.00	-		, ,		
Bromoform	ND	ug/L	0.50	1		01/17/17 17:5	5 75-25-2	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: FB-011217	Lab ID: 204	Lab ID: 2048681008		7 14:48	Received: 0)1/12/17 15:48 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Met	nod: EPA 50	030B/8260					
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:55	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:55	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:55	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:55	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:55	75-00-3	
Chloroform	5.0	ug/L	0.50	1		01/17/17 17:55	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:55	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:55	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:55	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:55	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:55	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:55		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:55		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:55		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:55		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:55		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:55		
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:55		
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:55		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:55		
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:55		
Methylene Chloride	ND	ug/L ug/L	0.50	1		01/17/17 17:55		
•	ND ND	•	1.0	1		01/17/17 17:55		
4-Methyl-2-pentanone (MIBK)		ug/L		1		01/17/17 17:55		
Methyl-tert-butyl ether	ND	ug/L	0.50 1.0	1				
Styrene	ND	ug/L		1		01/17/17 17:55		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	-		01/17/17 17:55		
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:55		
Toluene	ND	ug/L	0.50	1		01/17/17 17:55		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:55		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:55		
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:55		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:55		
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:55		
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 17:55		
o-Xylene	ND	ug/L	1.0	1		01/17/17 17:55	95-47-6	
Surrogates								
Dibromofluoromethane (S)	107	%.	72-126	1		01/17/17 17:55		
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/17/17 17:55		
Toluene-d8 (S)	101	%.	79-119	1		01/17/17 17:55	2037-26-5	



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

QC Batch: 72351 Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

METHOD BLANK: 303024 Matrix: Water

Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

Blank Reporting

 Parameter
 Units
 Result
 Limit
 Analyzed
 Qualifiers

 Gasoline Range Organics
 ug/L
 ND
 50.0
 01/18/17 18:45

 4-Bromofluorobenzene (S)
 %.
 99
 44-148
 01/18/17 18:45

LABORATORY CONTROL SAMPLE: 303025

5 .	11.5	Spike	LCS	LCS	% Rec	0 ""
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Gasoline Range Organics	ug/L	500	464	93	61-136	
4-Bromofluorobenzene (S)	%.			99	44-148	
4-Bromofluorobenzene (S)	%.			100	44-148	

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	CATE: 30302	6		303027							
		2048850001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Gasoline Range Organics	ug/L	25.4J	500	500	592	569	113	109	15-147	4	20	
4-Bromofluorobenzene (S)	%.						100	100	44-148			
4-Bromofluorobenzene (S)	%.						94	100	44-148			
4-Bromofluorobenzene (S)	%.						100	102	44-148			
4-Bromofluorobenzene (S)	%.						94	102	44-148			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

QC Batch: 72219 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302543 Matrix: Water

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 01/19/17 10:57

LABORATORY CONTROL SAMPLE: 302544

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury ug/L 1.0 103 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 302545 302546

MS MSD MS 2048681002 Spike Spike MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual ND 1 1.0 75-125 2 20 Mercury ug/L 1 1.0 103 105

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

QC Batch: 72220 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302547 Matrix: Water

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury, Dissolved ug/L ND 0.20 01/19/17 12:11

LABORATORY CONTROL SAMPLE: 302548

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 110 Mercury, Dissolved ug/L 1.1 80-120

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

QC Batch: 72197 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302459 Matrix: Water

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/11/17 11:14	
Chromium	mg/L	ND	0.0010	02/11/17 11:14	
Lead	mg/L	ND	0.0010	02/11/17 11:14	
Vanadium	mg/L	ND	0.0050	02/11/17 11:14	

LABORATORY CONTROL SAMPLE: 302460 LCS Spike LCS % Rec Parameter Conc. Result % Rec Limits Qualifiers Units Arsenic mg/L .02 0.020 101 83-115 Chromium mg/L .02 0.020 102 85-115 Lead mg/L .02 0.020 100 84-115 Vanadium mg/L .02 0.019 93 81-115

MATRIX SPIKE & MATRIX SPI		302462										
Darameter	Unito	2048748001	MS Spike	MSD Spike	MS	MSD	MS % Rec	MSD	% Rec	DDD	Max	Ougl
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	0.00045J	.02	.02	0.020	0.021	98	100	80-120	2	20	
Chromium	mg/L	0.0012	.02	.02	0.021	0.021	99	100	80-120	1	20	
Lead	mg/L	0.00052J	.02	.02	0.021	0.021	102	104	80-120	3	20	
Vanadium	mg/L	ND	.02	.02	0.022	0.021	108	107	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

QC Batch: 72224 Analysis Method: EPA 6020

QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302560 Matrix: Water

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Chromium, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Lead, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Vanadium, Dissolved	ua/L	ND	5.0	02/11/17 11:07	

LABORATORY CONTROL SAMPLE: 302561

Date: 02/15/2017 12:15 PM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L		19.9	100	80-120	
Chromium, Dissolved	ug/L	20	21.3	107	80-120	
Lead, Dissolved	ug/L	20	19.6	98	80-120	
Vanadium, Dissolved	ug/L	20	17.2	86	80-120	

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Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

QC Batch: 72210 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level

Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

METHOD BLANK: 302517 Matrix: Water

Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

·	,	Blank	Reporting	,	
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1-Dichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1-Dichloroethene	ug/L	ND	0.50	01/17/17 10:33	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/17/17 10:33	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/17/17 10:33	
1,2-Dichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,2-Dichloropropane	ug/L	ND	0.50	01/17/17 10:33	
2-Butanone (MEK)	ug/L	ND	2.0	01/17/17 10:33	
2-Hexanone	ug/L	ND	1.0	01/17/17 10:33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/17/17 10:33	
Acetone	ug/L	ND	4.0	01/17/17 10:33	
Benzene	ug/L	ND	0.50	01/17/17 10:33	
Bromodichloromethane	ug/L	ND	0.50	01/17/17 10:33	
Bromoform	ug/L	ND	0.50	01/17/17 10:33	
Bromomethane	ug/L	ND	0.50	01/17/17 10:33	
Carbon disulfide	ug/L	ND	1.0	01/17/17 10:33	
Carbon tetrachloride	ug/L	ND	0.50	01/17/17 10:33	
Chlorobenzene	ug/L	ND	0.50	01/17/17 10:33	
Chloroethane	ug/L	ND	0.50	01/17/17 10:33	
Chloroform	ug/L	ND	0.50	01/17/17 10:33	
Chloromethane	ug/L	ND	0.50	01/17/17 10:33	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/17/17 10:33	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/17/17 10:33	
Dibromochloromethane	ug/L	ND	0.50	01/17/17 10:33	
Dichlorodifluoromethane	ug/L	ND	1.0	01/17/17 10:33	
Ethylbenzene	ug/L	ND	0.50	01/17/17 10:33	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/17/17 10:33	
m&p-Xylene	ug/L	ND	2.0	01/17/17 10:33	
Methyl acetate	ug/L	ND	2.0	01/17/17 10:33	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/17/17 10:33	
Methylene Chloride	ug/L	ND	0.50	01/17/17 10:33	
o-Xylene	ug/L	ND	1.0	01/17/17 10:33	
Styrene	ug/L	ND	1.0	01/17/17 10:33	
Tetrachloroethene	ug/L	ND	0.50	01/17/17 10:33	
Toluene	ug/L	ND	0.50	01/17/17 10:33	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/17/17 10:33	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/17/17 10:33	
Trichloroethene	ug/L	ND	0.50	01/17/17 10:33	
Trichlorofluoromethane	ug/L	ND	0.50	01/17/17 10:33	

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Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

METHOD BLANK: 302517 Matrix: Water

Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND ND	0.50	01/17/17 10:33	
4-Bromofluorobenzene (S)	%.	95	68-124	01/17/17 10:33	
Dibromofluoromethane (S)	%.	106	72-126	01/17/17 10:33	
Toluene-d8 (S)	%.	100	79-119	01/17/17 10:33	

LABORATORY CONTROL SAMPLE	: 302518					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.9	108	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	52.7	105	15-179	
1,1,2-Trichloroethane	ug/L	50	50.9	102	58-144	
1,1-Dichloroethane	ug/L	50	58.4	117	63-129	
1,1-Dichloroethene	ug/L	50	54.5	109	51-139	
,2-Dibromo-3-chloropropane	ug/L	50	52.5	105	21-160	
,2-Dibromoethane (EDB)	ug/L	50	49.5	99	52-161	
,2-Dichloroethane	ug/L	50	53.9	108	57-148	
,2-Dichloropropane	ug/L	50	56.9	114	66-128	
2-Butanone (MEK)	ug/L	50	59.8	120	32-183	
2-Hexanone	ug/L	50	51.8	104	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	53.0	106	26-171	
Acetone	ug/L	50	54.5	109	22-165	
Benzene	ug/L	50	54.4	109	62-131	
Bromodichloromethane	ug/L	50	55.4	111	69-132	
Bromoform	ug/L	50	47.5	95	35-166	
Bromomethane	ug/L	50	45.1	90	34-158	
Carbon disulfide	ug/L	50	74.0	148	31-128 L	.0
Carbon tetrachloride	ug/L	50	52.2	104	54-144	
Chlorobenzene	ug/L	50	52.8	106	70-127	
Chloroethane	ug/L	50	40.3	81	17-195	
Chloroform	ug/L	50	56.6	113	73-134	
Chloromethane	ug/L	50	61.8	124	17-153	
cis-1,2-Dichloroethene	ug/L	50	54.1	108	68-129	
cis-1,3-Dichloropropene	ug/L	50	55.1	110	72-138	
Dibromochloromethane	ug/L	50	51.5	103	49-146	
Dichlorodifluoromethane	ug/L	50	53.0	106	10-179	
Ethylbenzene	ug/L	50	50.5	101	66-126	
sopropylbenzene (Cumene)	ug/L	50	49.7	99	51-138	
n&p-Xylene	ug/L	100	101	101	65-129	
Methyl acetate	ug/L	50	56.4	113	20-142	
Methyl-tert-butyl ether	ug/L	50	53.1	106	37-166	
Methylene Chloride	ug/L	50	57.7	115	46-168	
o-Xylene	ug/L	50	49.3	99	65-124	
Styrene	ug/L	50	51.1	102	72-133	
Tetrachloroethene	ug/L	50	51.1	102	46-157	

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Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

LABORATORY CONTROL SAMPLE	: 302518					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Toluene	ug/L	50	53.3	107	69-126	
ans-1,2-Dichloroethene	ug/L	50	55.6	111	60-129	
ans-1,3-Dichloropropene	ug/L	50	54.0	108	59-149	
ichloroethene	ug/L	50	54.5	109	67-132	
chlorofluoromethane	ug/L	50	54.4	109	39-171	
yl chloride	ug/L	50	45.7	91	27-149	
Bromofluorobenzene (S)	%.			97	68-124	
oromofluoromethane (S)	%.			105	72-126	
luene-d8 (S)	%.			101	79-119	

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	CATE: 30251	9		302520							
			MS	MSD								
		2048748001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	63.7	55.7	127	111	54-137	13	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	58.2	54.8	116	110	15-187	6	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	57.7	51.5	115	103	59-148	11	20	
1,1-Dichloroethane	ug/L	ND	50	50	66.4	59.2	133	118	59-133	11	20	
1,1-Dichloroethene	ug/L	ND	50	50	65.8	58.8	132	118	44-146	11	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	57.3	52.7	115	105	23-166	8	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	54.8	51.1	110	102	55-166	7	20	
1,2-Dichloroethane	ug/L	ND	50	50	59.4	53.0	119	106	56-154	11	20	
1,2-Dichloropropane	ug/L	ND	50	50	61.4	55.6	123	111	62-135	10	20	
2-Butanone (MEK)	ug/L	ND	50	50	64.9	58.8	130	118	20-205	10	20	
2-Hexanone	ug/L	ND	50	50	54.7	52.9	109	106	25-189	3	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	57.9	54.1	116	108	23-184	7	20	
Acetone	ug/L	0.0057 mg/L	50	50	63.1	56.4	115	101	11-217	11	20	
Benzene	ug/L	ND	50	50	60.7	54.5	121	109	52-141	11	20	
Bromodichloromethane	ug/L	ND	50	50	60.5	55.0	121	110	70-134	10	20	
Bromoform	ug/L	ND	50	50	51.6	47.9	103	96	37-171	7	20	
Bromomethane	ug/L	ND	50	50	52.5	39.2	105	78	34-155	29	20	R1
Carbon disulfide	ug/L	ND	50	50	93.4	75.3	187	151	28-130	21	20	M0,R1
Carbon tetrachloride	ug/L	ND	50	50	60.9	53.3	122	107	48-146	13	20	
Chlorobenzene	ug/L	ND	50	50	59.5	53.4	119	107	67-129	11	20	
Chloroethane	ug/L	ND	50	50	47.6	37.0	95	74	12-192	25	20	R1
Chloroform	ug/L	ND	50	50	63.7	57.1	127	114	66-143	11	20	
Chloromethane	ug/L	ND	50	50	67.1	59.6	134	119	14-155	12	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.2	56.3	122	113	56-141	8	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	60.7	54.3	121	109	70-139	11	20	
Dibromochloromethane	ug/L	ND	50	50	55.1	51.4	110	103	50-150	7	20	
Dichlorodifluoromethane	ug/L	ND	50	50	55.6	48.6	111	97	10-173	14	20	
Ethylbenzene	ug/L	ND	50	50	57.4	51.8	115	104	57-135	10	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	58.1	54.3	116	109	40-146	7	20	

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Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

MATRIX SPIKE & MATRIX SPI	INE DUPLIC	CATE: 30251	MS	MSD	302520							
		2048748001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
m&p-Xylene	ug/L	ND	100	100	116	105	116	105	56-136	10	20	
Methyl acetate	ug/L	ND	50	50	57.5	58.6	115	117	10-142	2	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	58.1	52.9	116	106	35-176	9	20	
Methylene Chloride	ug/L	ND	50	50	63.8	55.1	128	110	45-166	15	20	
o-Xylene	ug/L	ND	50	50	54.8	49.9	110	100	57-133	9	20	
Styrene	ug/L	ND	50	50	57.0	51.0	114	102	58-144	11	20	
Tetrachloroethene	ug/L	ND	50	50	60.2	54.5	120	109	48-143	10	20	
Toluene	ug/L	ND	50	50	58.8	53.8	118	108	59-136	9	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	64.5	57.7	129	115	57-132	11	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	60.8	55.1	122	110	59-154	10	20	
Trichloroethene	ug/L	ND	50	50	61.3	55.9	123	112	58-140	9	20	
Trichlorofluoromethane	ug/L	ND	50	50	67.6	57.1	135	114	24-175	17	20	
Vinyl chloride	ug/L	ND	50	50	51.7	44.1	103	88	21-150	16	20	
4-Bromofluorobenzene (S)	%.						98	99	68-124			
Dibromofluoromethane (S)	%.						108	107	72-126			
Toluene-d8 (S)	%.						100	101	79-119			

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Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

 QC Batch:
 72198
 Analysis Method:
 EPA 8015B Modified

 QC Batch Method:
 EPA 3535
 Analysis Description:
 EPA 8015 ORO

 Associated Lab Samples:
 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681006
 2048681006, 2048681007

METHOD BLANK: 302463 Matrix: Water

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed Diesel Range Organic (C10-C28) mg/L ND 0.25 01/18/17 15:39 Oil Range Organics (>C28-C40) mg/L ND 0.50 01/18/17 15:39 n-Pentacosane (S) 01/18/17 15:39 %. 38 16-137 o-Terphenyl (S) %. 47 10-121 01/18/17 15:39

LABORATORY CONTROL SAMPLE: 302464

Date: 02/15/2017 12:15 PM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L		.21J	52	10-115	
n-Pentacosane (S)	%.			51	16-137	
o-Terphenyl (S)	%.			61	10-121	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

 QC Batch:
 72204
 Analysis Method:
 EPA 8270 by SIM

 QC Batch Method:
 EPA 3510
 Analysis Description:
 8270 Water by SIM MSSV

 Associated Lab Samples:
 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302499 Matrix: Water

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/17/17 17:36	
Acenaphthene	ug/L	ND	0.10	01/17/17 17:36	
Acenaphthylene	ug/L	ND	0.10	01/17/17 17:36	
Anthracene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(a)anthracene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(a)pyrene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Chrysene	ug/L	ND	0.10	01/17/17 17:36	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/17/17 17:36	
Fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Fluorene	ug/L	ND	0.10	01/17/17 17:36	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/17/17 17:36	
Naphthalene	ug/L	ND	0.10	01/17/17 17:36	
Phenanthrene	ug/L	ND	0.10	01/17/17 17:36	
Pyrene	ug/L	ND	0.10	01/17/17 17:36	
2-Fluorobiphenyl (S)	%.	67	25-150	01/17/17 17:36	
Terphenyl-d14 (S)	%.	72	25-150	01/17/17 17:36	

LABORATORY CONTROL SAMPLE:	302500					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.6	90	35-150	
Acenaphthene	ug/L	4	3.6	91	35-150	
Acenaphthylene	ug/L	4	3.5	88	35-150	
Anthracene	ug/L	4	4.5	112	35-150	
Benzo(a)anthracene	ug/L	4	4.0	99	35-150	
Benzo(a)pyrene	ug/L	4	3.7	91	35-150	
Benzo(b)fluoranthene	ug/L	4	3.6	91	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.1	102	35-150	
Benzo(k)fluoranthene	ug/L	4	3.7	93	35-150	
Chrysene	ug/L	4	3.7	93	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.6	115	35-150	
Fluoranthene	ug/L	4	3.7	93	35-150	
Fluorene	ug/L	4	3.7	92	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.4	110	35-150	
Naphthalene	ug/L	4	3.3	82	35-150	
Phenanthrene	ug/L	4	3.8	96	35-150	
Pyrene	ug/L	4	3.4	85	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

LABORATORY CONTROL SAMPLE: 302500 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 2-Fluorobiphenyl (S) %. 25-150 101 Terphenyl-d14 (S) 108 %. 25-150

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72289

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 72350

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 72356

[1] Insufficient sample volume to perform MS/MSD analyses.

ANALYTE QUALIFIERS

Date: 02/15/2017 12:15 PM

C9 Common Laboratory Contaminant.

LO Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in

associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

₋ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2048681002	EB-011217	EPA 3535	72198	EPA 8015B Modified	72350
048681003	MW-76B2	EPA 3535	72198	EPA 8015B Modified	72350
048681004	MW-76A	EPA 3535	72198	EPA 8015B Modified	72350
048681005	MW-13A	EPA 3535	72198	EPA 8015B Modified	72350
048681006	MW-13B2	EPA 3535	72198	EPA 8015B Modified	72350
048681007	MW-37A	EPA 3535	72198	EPA 8015B Modified	72350
048681001	TB-011217	EPA 8015/8021	72351		
048681002	EB-011217	EPA 8015/8021	72351		
048681003	MW-76B2	EPA 8015/8021	72351		
048681004	MW-76A	EPA 8015/8021	72351		
048681005	MW-13A	EPA 8015/8021	72351		
148681006	MW-13B2	EPA 8015/8021	72351		
048681007	MW-37A	EPA 8015/8021	72351		
048681008	FB-011217	EPA 8015/8021	72351		
048681002	EB-011217	EPA 3010	72197	EPA 6020	72202
048681003	MW-76B2	EPA 3010	72197	EPA 6020	72202
048681004	MW-76A	EPA 3010	72197	EPA 6020	72202
048681005	MW-13A	EPA 3010	72197	EPA 6020	72202
048681006	MW-13B2	EPA 3010	72197	EPA 6020	72202
048681007	MW-37A	EPA 3010	72197	EPA 6020	72202
048681002	EB-011217	EPA 3005A	72224	EPA 6020	72356
048681003	MW-76B2	EPA 3005A	72224	EPA 6020	72356
048681004	MW-76A	EPA 3005A	72224	EPA 6020	72356
048681005	MW-13A	EPA 3005A	72224	EPA 6020	72356
048681006	MW-13B2	EPA 3005A	72224	EPA 6020	72356
048681007	MW-37A	EPA 3005A	72224	EPA 6020	72356
048681002	EB-011217	EPA 7470	72219	EPA 7470	72363
048681003	MW-76B2	EPA 7470	72219	EPA 7470	72363
048681004	MW-76A	EPA 7470	72219	EPA 7470	72363
048681005	MW-13A	EPA 7470	72219	EPA 7470	72363
048681006	MW-13B2	EPA 7470	72219	EPA 7470	72363
048681007	MW-37A	EPA 7470	72219	EPA 7470	72363
048681002	EB-011217	EPA 7470	72220	EPA 7470	72355
048681003	MW-76B2	EPA 7470	72220	EPA 7470	72355
048681004	MW-76A	EPA 7470	72220	EPA 7470	72355
048681005	MW-13A	EPA 7470	72220	EPA 7470	72355
048681006	MW-13B2	EPA 7470	72220	EPA 7470	72355
048681007	MW-37A	EPA 7470	72220	EPA 7470	72355
048681002	EB-011217	EPA 3510	72204	EPA 8270 by SIM	72289
048681003	MW-76B2	EPA 3510	72204	EPA 8270 by SIM	72289
048681004	MW-76A	EPA 3510	72204	EPA 8270 by SIM	72289
048681005	MW-13A	EPA 3510	72204	EPA 8270 by SIM	72289
048681006	MW-13B2	EPA 3510	72204	EPA 8270 by SIM	72289
048681007	MW-37A	EPA 3510	72204	EPA 8270 by SIM	72289



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048681002	EB-011217	EPA 5030B/8260	72210		
2048681003	MW-76B2	EPA 5030B/8260	72210		
2048681004	MW-76A	EPA 5030B/8260	72210		
2048681005	MW-13A	EPA 5030B/8260	72210		
2048681006	MW-13B2	EPA 5030B/8260	72210		
2048681007	MW-37A	EPA 5030B/8260	72210		
2048681008	FB-011217	EPA 5030B/8260	72210		



CHAIN-OF-CUSTODY
The Chain-of-Custody is a LEGAL DOCU

WO#: 2048681



	ection B equired Project	Information:			Section C Invoice Infor	■1 20	48681		42 E							OT	
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Requested Due Date/TAT:	roject Number:	<u> </u>	1605 B		Pace Profile #					Á	STA	TE:	ρ.	<u></u>			
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Section D Matrix Code Required Client Information MATRIX / CO	les (£	MP)	COLLECTE	ED		Preser	vatives .	ŤN /A						Á			
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Page ORIG	GINAL		SAMPLER NA	ME AND SIGNATU	RE		U							ှံ ပု	no 9	ly oler	ntact
460	THE STREET		PRIN	IT Name of SAMPLE	R: And-	حص ت	<u>مر</u>							Temp in *	Received on foe (Y/N)	Custody Sealed Cook (Y/N)	oles I; (Y/N)
f 47			SIGN	NATURE of SAMPLE	R: MM	ι			DATE Sig (MM/DD/	gned YY): 0 (112/	i		Ter	Rec	Seal	Samples Intact (Y/N)

W0#:2048681

Sample Condition Upon Receip

Due Date: 01/26/17

CLIENT: 98-ARCADISPR

/_Pace Analytical	1000 Riverbend, Blvd., Suite F St. Rose, LA 70087			Project #.			
Courier: Pace Courier	☐ Hired Courier ☐ F	ed X	□ UF	S 🗆 DHL	□ USPS	☐ Customer	☐ Other
Custody Seal on Cooler/Box Pre	esent: [see COC]	_		•	Custody	Seals intact:	es □No
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Il containers received within ma recautionary and/or expiration of		s 🗆 No	□n/a	11		di tu Shiriy	·
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Client Notification/ Resolution Person Contacted:	1:				Date	e/Time:	
Comments/ Resolution:				·			
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	. '						
<u> </u>							





January 16, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 28, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

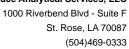
Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047967001	TB-122716	Water	12/27/16 00:00	12/28/16 15:50
2047967002	EB-122716	Water	12/27/16 08:54	12/28/16 15:50
2047967003	MW-18D	Water	12/27/16 09:34	12/28/16 15:50
2047967004	MW-87A	Water	12/27/16 10:29	12/28/16 15:50
2047967005	MW-91A	Water	12/27/16 11:18	12/28/16 15:50
2047967006	MW-88A	Water	12/27/16 12:53	12/28/16 15:50
2047967007	MW-99A	Water	12/27/16 13:46	12/28/16 15:50
2047967008	MW-98A	Water	12/27/16 15:03	12/28/16 15:50
2047967009	MW-30A	Water	12/27/16 15:53	12/28/16 15:50
2047967010	FB-122716	Water	12/27/16 15:58	12/28/16 15:50
2047967011	TB122816	Water	12/28/16 00:00	12/28/16 15:50
2047967012	EB-122816	Water	12/28/16 08:51	12/28/16 15:50
2047967013	MW-16C	Water	12/28/16 09:27	12/28/16 15:50
2047967014	WWTP-1	Water	12/28/16 10:19	12/28/16 15:50
2047967015	MW-B1	Water	12/28/16 11:37	12/28/16 15:50
2047967016	DUP003	Water	12/28/16 00:00	12/28/16 15:50
2047967017	WWTP-2	Water	12/28/16 13:33	12/28/16 15:50
2047967018	EB-101	Water	12/28/16 14:16	12/28/16 15:50
2047967019	EB-102	Water	12/28/16 14:59	12/28/16 15:50
2047967021	FB-122816	Water	12/28/16 15:05	12/28/16 15:50



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047967001	TB-122716	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967002	EB-122716	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967003	MW-18D	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967004	MW-87A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967005	MW-91A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967006	MW-88A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967007	MW-99A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967008	MW-98A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967009	MW-30A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967010	FB-122716	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967011	TB122816	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967012	EB-122816	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

_ab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967013	MW-16C	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967014	WWTP-1	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967015	MW-B1	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967016	DUP003	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047967017	WWTP-2	EPA 8015B Modified	SLF	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967018	EB-101	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967019	EB-102	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967021	FB-122816	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71180

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

20 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 6020

Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 7470
Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71190

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 71254

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

20 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71181

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 297711)
 - Bromomethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71181

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047967003

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 297712)
 - Bromomethane
- MSD (Lab ID: 297713)
 - Bromomethane

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method:EPA 5030B/8260Description:8260 MSV Low LevelClient:BBL Caribe / Arcadis PRDate:January 16, 2017

Analyte Comments:

QC Batch: 71181

C9: Common Laboratory Contaminant.

- DUP003 (Lab ID: 2047967016)
 - Acetone
- EB-101 (Lab ID: 2047967018)
 - Acetone
- EB-102 (Lab ID: 2047967019)
 - Acetone
- EB-122716 (Lab ID: 2047967002)
 - Acetone
- EB-122816 (Lab ID: 2047967012)
 - Acetone
- FB-122716 (Lab ID: 2047967010)
 - Acetone
- FB-122816 (Lab ID: 2047967021)
 - Acetone
- MW-16C (Lab ID: 2047967013)
 - Acetone
- MW-18D (Lab ID: 2047967003)
 - Acetone
- MW-30A (Lab ID: 2047967009)
 - Acetone
- MW-87A (Lab ID: 2047967004)
- AcetoneMW-88A (Lab ID: 2047967006)
- Acetone
 - 14,004 /
- MW-98A (Lab ID: 2047967008)
 - Acetone
- MW-99A (Lab ID: 2047967007)
 - Acetone
- MW-B1 (Lab ID: 2047967015)
 - Acetone
- TB-122716 (Lab ID: 2047967001)
 - Acetone
- TB122816 (Lab ID: 2047967011)
 - Acetone
- WWTP-1 (Lab ID: 2047967014)
 - Acetone
- WWTP-2 (Lab ID: 2047967017)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Sample: TB-122716	Lab ID: 204	7967001	Collected: 12/27/1	16 00:00	Received:	12/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	101	ug/L	50.0	1		01/04/17 17:12	2	
4-Bromofluorobenzene (S)	86	%.	44-148	1		01/04/17 17:12	2 460-00-4	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	19.2	ug/L	4.0	1		12/29/16 13:3	2 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 13:3	2 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 13:3	2 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 13:3	2 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 13:3	2 74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 13:3	2 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 13:3	2 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 13:3	2 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 13:3		
Chloroethane	ND	ug/L	0.50	1		12/29/16 13:3		
Chloroform	ND	ug/L	0.50	1		12/29/16 13:3		
Chloromethane	ND	ug/L	0.50	1		12/29/16 13:3		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 13:3		
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 13:3		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 13:3		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 13:3		
,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 13:3		
,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 13:3		
,1-Dichloroethene	ND ND	ug/L	0.50	1		12/29/16 13:3		
is-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 13:3		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 13:3		
•	ND ND	•	0.50	1		12/29/16 13:3		
,2-Dichloropropane		ug/L		1				
cis-1,3-Dichloropropene	ND	ug/L	0.50			12/29/16 13:3		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1 1		12/29/16 13:3		
Ethylbenzene	ND	ug/L	0.50			12/29/16 13:3		
2-Hexanone	ND	ug/L	1.0	1		12/29/16 13:3		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 13:3:		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 13:3:		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 13:3		
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 13:3		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 13:3		
Styrene	ND	ug/L	1.0	1		12/29/16 13:3		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 13:3		
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 13:3		
oluene	ND	ug/L	0.50	1		12/29/16 13:3		
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 13:3		
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 13:3		
richloroethene	ND	ug/L	0.50	1		12/29/16 13:3	2 79-01-6	
richlorofluoromethane	ND	ug/L	0.50	1		12/29/16 13:3	2 75-69-4	
/inyl chloride	ND	ug/L	0.50	1		12/29/16 13:3	2 75-01-4	
n&p-Xylene	ND	ug/L	2.0	1		12/29/16 13:3	2 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 13:3	2 95-47-6	



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Pace Project No.: 2047967								
Sample: TB-122716	Lab ID: 204	7967001	Collected: 12/27/	16 00:00	Received: 1	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3260 MSV Low Level	Analytical Met	nod: EPA 50	030B/8260					
Surrogates	00	0/	70.400	4		40/00/40 40-0	0 4000 50 7	
Dibromofluoromethane (S) 4-Bromofluorobenzene (S)	90 93	%. %.	72-126 68-124	1 1		12/29/16 13:3 12/29/16 13:3		
` ,	104	%. %.	79-119	1		12/29/16 13:3		
Γoluene-d8 (S)	104	70.	79-119	1		12/29/10 13.3	2 2037-20-3	
Sample: EB-122716	Lab ID: 204	7967002	Collected: 12/27/	16 08:54	Received: 1	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3015M DRO/ORO Organics	Analytical Met	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	3 01/09/17 14:4	1	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		3 01/09/17 14:4		
Surrogates		5						
n-Pentacosane (S)	47	%.	16-137	1	12/30/16 10:38	3 01/09/17 14:4	1 629-99-2	
o-Terphenyl (S)	44	%.	10-121	1	12/30/16 10:38	3 01/09/17 14:4	1 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/04/17 17:3	7	
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/04/17 17:3	7 460-00-4	
6020 MET ICPMS	Analytical Met	nod: EPA 60	020 Preparation Met	hod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:4	0 7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:4	0 7440-47-3	
∟ead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:4	0 7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 12:4	0 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	nod: EPA 60	020 Preparation Met	hod: EPA	3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:1	0 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		5 01/06/17 14:1		
_ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:1	0 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:1	0 7440-62-2	
470 Mercury	Analytical Met	nod: EPA 7	470 Preparation Met	hod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	9 01/03/17 11:2	3 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	nod: EPA 74	470 Preparation Met	hod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:1	3 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Met	nod: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 50-32-8	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: EB-122716	Lab ID: 20	47967002	Collected: 12/27/1	16 08:54	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Me	ethod: EPA 8	270 by SIM Preparat	ion Meth	od: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 206-44-0	
Fluorene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 91-57-6	
laphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 85-01-8	
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:4	1 129-00-0	
Surrogates		J						
P-Fluorobiphenyl (S)	66	%.	25-150	1	12/30/16 11:29	01/09/17 14:4	1 321-60-8	
erphenyl-d14 (S)	65	%.	25-150	1	12/30/16 11:29	01/09/17 14:4	1 1718-51-0	
260 MSV Low Level	Analytical Me	ethod: EPA 50	030B/8260					
cetone	11.8	ug/L	4.0	1		12/29/16 13:50	0 67-64-1	C9
enzene	ND	ug/L	0.50	1		12/29/16 13:50	71-43-2	
romodichloromethane	ND	ug/L	0.50	1		12/29/16 13:50	75-27-4	
romoform	ND	ug/L	0.50	1		12/29/16 13:50	75-25-2	
romomethane	ND	ug/L	0.50	1		12/29/16 13:50	74-83-9	L3
-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 13:50	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 13:50	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 13:50	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 13:50	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 13:50	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 13:50	0 67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 13:50	74-87-3	
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 13:50	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 13:50	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 13:50	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 13:50	75-71-8	
,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 13:50	75-34-3	
,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 13:50	107-06-2	
,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 13:50	75-35-4	
is-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 13:50	156-59-2	
ans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 13:50	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 13:50	78-87-5	
is-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 13:50		
ans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 13:50		
ithylbenzene	ND	ug/L	0.50	1		12/29/16 13:50		
-Hexanone	ND	ug/L	1.0	1		12/29/16 13:50		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 13:50		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 13:50		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 13:50		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 13:50		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: EB-122716	Lab ID: 204	7967002	Collected: 12/27/1	6 08:54	Received: 12	/28/16 15:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 13:50	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 13:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 13:50	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 13:50	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 13:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 13:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 13:50	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 13:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 13:50	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 13:50	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 13:50		
o-Xylene	ND	ug/L	1.0	1		12/29/16 13:50		
Surrogates		· <i>9</i> · –					- -	
Dibromofluoromethane (S)	91	%.	72-126	1		12/29/16 13:50	1868-53-7	
4-Bromofluorobenzene (S)	94	%.	68-124	1		12/29/16 13:50	460-00-4	
Toluene-d8 (S)	103	%.	79-119	1		12/29/16 13:50	2037-26-5	
Sample: MW-18D	Lab ID: 204	7967003	Collected: 12/27/1	6 09:34	Received: 12	/28/16 15:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	od: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/09/17 15:10		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/09/17 15:10		
Surrogates		3	_					
n-Pentacosane (S)	35	%.	16-137	1	12/30/16 10:38	01/09/17 15:10	629-99-2	
` '	35 36	%. %.	16-137 10-121	1 1		01/09/17 15:10 01/09/17 15:10		
o-Terphenyl (S)	36	%.	10-121					
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO		%. nod: EPA 80	10-121				84-15-1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	36 Analytical Meth	%.	10-121	1		01/09/17 15:10	84-15-1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	36 Analytical Meth	%. nod: EPA 80	10-121	1		01/09/17 15:10	84-15-1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	36 Analytical Meth ND 88	%. nod: EPA 80 ug/L %.	10-121 015/8021 50.0	1 1 1	12/30/16 10:38	01/09/17 15:10 01/04/17 18:03	84-15-1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS	36 Analytical Meth ND 88 Analytical Meth	%. nod: EPA 80 ug/L %. nod: EPA 60	10-121 015/8021 50.0 44-148 020 Preparation Meth	1 1 1 nod: EPA	12/30/16 10:38	01/09/17 15:10 01/04/17 18:03 01/04/17 18:03	84-15-1 460-00-4	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic	36 Analytical Meth ND 88 Analytical Meth	%. ug/L %. nod: EPA 60 mg/L	10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010	1 1 1 nod: EPA 1	12/30/16 10:38 3010 12/30/16 16:10	01/09/17 15:10 01/04/17 18:03 01/04/17 18:03 01/06/17 12:44	84-15-1 460-00-4 7440-38-2	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium	36 Analytical Meth ND 88 Analytical Meth ND ND	%. ug/L %. nod: EPA 60 mg/L mg/L	10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010	1 1 1 nod: EPA 1 1	12/30/16 10:38 3010 12/30/16 16:10 12/30/16 16:10	01/09/17 15:10 01/04/17 18:03 01/04/17 18:03 01/06/17 12:44 01/06/17 12:44	84-15-1 460-00-4 7440-38-2 7440-47-3	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead	36 Analytical Meth ND 88 Analytical Meth ND ND ND	%. ug/L %. nod: EPA 60 mg/L mg/L mg/L	10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010	1 1 1 nod: EPA 1 1	12/30/16 10:38 3010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10	01/09/17 15:10 01/04/17 18:03 01/04/17 18:03 01/06/17 12:44 01/06/17 12:44 01/06/17 12:44	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	
D-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium	36 Analytical Meth ND 88 Analytical Meth ND ND ND ND ND ND	%. ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010 0.0050	1 1 1 nod: EPA 1 1 1	12/30/16 10:38 3010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10	01/09/17 15:10 01/04/17 18:03 01/04/17 18:03 01/06/17 12:44 01/06/17 12:44	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	36 Analytical Meth ND 88 Analytical Meth ND ND ND ND ND ND Analytical Meth	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L ood: EPA 60	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 nod: EPA 1 1 1 nod: EPA	12/30/16 10:38 3010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 3005A	01/09/17 15:10 01/04/17 18:03 01/04/17 18:03 01/06/17 12:44 01/06/17 12:44 01/06/17 12:44	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	36 Analytical Meth ND 88 Analytical Meth ND ND ND ND ND ND Analytical Meth ND	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L ood: EPA 60 ug/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 nod: EPA 1 1 1 nod: EPA 1	12/30/16 10:38 3010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 3005A 12/30/16 18:15	01/09/17 15:10 01/04/17 18:03 01/04/17 18:03 01/06/17 12:44 01/06/17 12:44 01/06/17 12:44 01/06/17 12:44	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	
o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved	36 Analytical Meth ND 88 Analytical Meth ND ND ND ND ND Analytical Meth ND	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L od: EPA 60 ug/L ug/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth 1.0	1 1 1 nod: EPA 1 1 nod: EPA 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12/30/16 10:38 33010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 3005A 12/30/16 18:15 12/30/16 18:15	01/09/17 15:10 01/04/17 18:03 01/04/17 18:03 01/06/17 12:44 01/06/17 12:44 01/06/17 12:44 01/06/17 12:44 01/06/17 14:26	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2 7440-47-3	
n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved Lead, Dissolved Vanadium, Dissolved	36 Analytical Meth ND 88 Analytical Meth ND ND ND ND ND ND Analytical Meth ND	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L ood: EPA 60 ug/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 nod: EPA 1 1 1 nod: EPA 1	12/30/16 10:38 3010 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 3005A 12/30/16 18:15 12/30/16 18:15 12/30/16 18:15	01/09/17 15:10 01/04/17 18:03 01/04/17 18:03 01/06/17 12:44 01/06/17 12:44 01/06/17 12:44 01/06/17 12:44	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2 7440-47-3 7439-92-1	



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Sample: MW-18D	Lab ID: 204	7967003	Collected: 12/27/1	6 09:34	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Meth	nod: EPA	٦ 7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:29	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:15	5 7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:0	1 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	1 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:0	1 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:0	1 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:0	1 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/09/17 15:0		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/09/17 15:0		
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29			
Chrysene	ND	ug/L	0.10	1		01/09/17 15:0		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29			
Fluoranthene	ND	ug/L	0.10	1		01/09/17 15:0		
Fluorene	ND	ug/L	0.10	1		01/09/17 15:0		
	ND ND	-	0.10	1		01/09/17 15:0° 01/09/17 15:0°		
ndeno(1,2,3-cd)pyrene 2-Methylnaphthalene	ND ND	ug/L	0.10	1		01/09/17 15:0		
• •		ug/L						
Naphthalene	ND	ug/L	0.10	1	12/30/16 11:29			
Phenanthrene	ND	ug/L	0.10	1		01/09/17 15:01		
Pyrene Surregates	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:0	1 129-00-0	
Surrogates 2-Fluorobiphenyl (S)	67	%.	25-150	1	12/30/16 11:20	01/09/17 15:0	1 321-60-8	
	65	%. %.	25-150 25-150	1	12/30/16 11:29			
Terphenyl-d14 (S)				'	12/30/10 11.29	01/09/17 15.0	1 1710-51-0	
B260 MSV Low Level	Analytical Met							
Acetone	28.2	ug/L	4.0	1		12/29/16 19:14		C9
Benzene	ND	ug/L	0.50	1		12/29/16 19:14		
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 19:14		
Bromoform	ND	ug/L	0.50	1		12/29/16 19:14		
Bromomethane	ND	ug/L	0.50	1		12/29/16 19:14	4 74-83-9	L3,M0
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 19:14		
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 19:14	4 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 19:14	4 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 19:14	1 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 19:14	4 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 19:14	4 67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 19:14	4 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 19:14	4 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 19:14	1 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 19:14	106-93-4	
Dichlorodifluoromethane 2	ND	ug/L	1.0	1		12/29/16 19:14		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 19:14		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 19:14		

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-18D	Lab ID: 204	7967003	Collected: 12/27/1	6 09:34	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 19:14	4 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 19:14	1 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 19:14	1 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 19:14	4 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 19:14	1 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 19:14	1 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 19:14	1 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 19:14	1 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 19:14	1 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 19:14	1 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 19:14		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 19:14		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 19:14		
Styrene	ND	ug/L	1.0	1		12/29/16 19:14		
1,1,2,2-Tetrachloroethane	ND ND	ug/L	0.50	1		12/29/16 19:14		
Tetrachloroethene	ND ND	ug/L ug/L	0.50	1		12/29/16 19:14		
Toluene	ND ND	ug/L ug/L	0.50	1		12/29/16 19:14	_	
1,1,1-Trichloroethane	ND ND	-	0.50	1		12/29/16 19:14		
, ,		ug/L				12/29/16 19:14		
1,1,2-Trichloroethane	ND	ug/L	0.50	1				
Trichloroethene	ND	ug/L	0.50	1		12/29/16 19:14		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 19:14		
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 19:14		
m&p-Xylene	ND	ug/L	2.0	1			179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 19:14	1 95-47-6	
Surrogates	0.4	0.4	70.400			10/00/10 10 1	4 4000 50 7	
Dibromofluoromethane (S)	91	%.	72-126	1		12/29/16 19:14		
4-Bromofluorobenzene (S)	91	%.	68-124	1		12/29/16 19:14		
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 19:14	1 2037-26-5	
Sample: MW-87A	Lab ID: 204	7967004	Collected: 12/27/1	6 10:29	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Metl	nod: EPA 80	D15B Modified Prepa	ration M	ethod: EPA 353	 5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/09/17 15:38	3	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		01/09/17 15:38		
n-Pentacosane (S)	49	%.	16-137	1	12/30/16 10:38	01/09/17 15:38	8 629-99-2	
o-Terphenyl (S)	48	%.	10-121	1	12/30/16 10:38	01/09/17 15:38	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 18:30)	
Surrogates								
4-Bromofluorobenzene (S)	83	%.	44-148	1		01/04/17 18:30		



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Sample: MW-87A	Lab ID: 2047	7967004	Collected: 12/27/1	6 10:29	Received: 12	2/28/16 15:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:16	7440-38-2	
Chromium	0.024	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:16	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:16	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 12:16	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:30	7440-38-2	
Chromium, Dissolved	24.0	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:30	7440-47-3	
₋ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:30	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:30	7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:31	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:17	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	70 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/09/17 15:21		
Fluoranthene	ND	ug/L	0.10	1		01/09/17 15:21		
Fluorene	ND	ug/L	0.10	1		01/09/17 15:21		
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/09/17 15:21		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/09/17 15:21		
Naphthalene	ND	ug/L	0.10	1		01/09/17 15:21		
Phenanthrene	ND	ug/L	0.10	1		01/09/17 15:21		
Pyrene	ND	ug/L	0.10	1		01/09/17 15:21		
Surrogates	ND	ug/L	0.10	'	12/30/10 11.29	01/03/17 13.21	129-00-0	
2-Fluorobiphenyl (S)	76	%.	25-150	1	12/30/16 11:29	01/09/17 15:21	321-60-8	
Ferphenyl-d14 (S)	74	%.	25-150	1		01/09/17 15:21		
3260 MSV Low Level	Analytical Meth	nod: EPA 50	30B/8260					
Acetone	7.1	ug/L	4.0	1		12/29/16 14:08	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 14:08		
Bromodichloromethane	ND	ug/L ug/L	0.50	1		12/29/16 14:08	_	
Bromoform	ND ND	ug/L ug/L	0.50	1		12/29/16 14:08	-	
Bromomethane		_						12
Bromometnane 2-Butanone (MEK)	ND ND	ug/L ug/L	0.50 2.0	1 1		12/29/16 14:08 12/29/16 14:08		L3

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-87A	Lab ID: 204	7967004	Collected: 12/27/1	6 10:29	Received:	12/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Metl	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 14:08	3 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 14:08	3 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 14:08	3 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 14:08	3 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 14:08	3 67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 14:08	3 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 14:08	3 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 14:08	3 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 14:08	3 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 14:08	3 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:08	3 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:08	3 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:08	3 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 14:08	3 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:08		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 14:08	3 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 14:08	3 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 14:08		
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 14:08		
2-Hexanone	ND	ug/L	1.0	1		12/29/16 14:08		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 14:08		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 14:08		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 14:08		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 14:08		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 14:08		
Styrene	ND	ug/L	1.0	1		12/29/16 14:08		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 14:08		
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 14:08		
Toluene	ND	ug/L	0.50	1		12/29/16 14:08		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:08		
1,1,2-Trichloroethane	ND ND	ug/L	0.50	1		12/29/16 14:08		
Frichloroethene	ND ND	ug/L ug/L	0.50	1		12/29/16 14:08		
Frichlorofluoromethane	ND ND	ug/L	0.50	1		12/29/16 14:08		
/inyl chloride	ND ND	ug/L	0.50	1		12/29/16 14:08		
n&p-Xylene	ND ND	ug/L ug/L	2.0	1			3 179601-23-1	
nap-Aylene p-Xylene	ND ND	ug/L ug/L	1.0	1		12/29/16 14:08		
Surrogates	IND	ug/L	1.0	1		12/23/10 14.00	33-41-0	
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 14:08	3 1868-53-7	
4-Bromofluorobenzene (S)	95	%.	68-124	1		12/29/16 14:08		
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 14:08		



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Sample: MW-91A	Lab ID: 2047	7967005	Collected: 12/27/1	6 11:18	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	4.5	mg/L	0.50	1	12/30/16 10:38	01/09/17 16:06	5	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/09/17 16:06	5	
Surrogates								
n-Pentacosane (S)	82	%.	16-137	1		01/09/17 16:06		
o-Terphenyl (S)	90	%.	10-121	1	12/30/16 10:38	01/09/17 16:06	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	15/8021					
Gasoline Range Organics	32600	ug/L	500	10		01/04/17 16:46	5	
Surrogates	00	0/	44.440	40		04/04/47 40 40		
4-Bromofluorobenzene (S)	99	%.	44-148	10		01/04/17 16:46	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	A 3010			
Arsenic	0.0041	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:48	3 7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:48	3 7440-47-3	
Lead	0.0012	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:48	7439-92-1	
<i>V</i> anadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 12:48	3 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	2.0	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:34	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/06/17 14:34		
_ead, Dissolved	ND	ug/L	1.0	1		01/06/17 14:34		
/anadium, Dissolved	ND	ug/L	5.0	1		01/06/17 14:34		
7470 Mercury	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1		01/03/17 11:33	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	\ 7470			
Mercury, Dissolved	ND	ug/L	0.20	1		01/03/17 12:19	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	•	70 by SIM Preparati	ion Meth	od: EPA 3510			
Acenaphthene	0.74	ug/L	0.10	1		01/09/17 15:41	83-32-0	
Acenaphthylene	0.28	ug/L	0.10	1		01/09/17 15:41		
Anthracene	ND	ug/L	0.10	1		01/09/17 15:41		
	ND ND	ug/L ug/L	0.10	1		01/09/17 15:41	-	
Benzo(a)anthracene		-	0.10					
Benzo(a)pyrene	ND	ug/L		1		01/09/17 15:41		
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/09/17 15:41		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/09/17 15:41		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/09/17 15:41		
Chrysene	ND	ug/L	0.10	1		01/09/17 15:41		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/09/17 15:41		
Fluoranthene	ND	ug/L	0.10	1		01/09/17 15:41		
Fluorene	1.3	ug/L	0.10	1		01/09/17 15:41		
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/09/17 15:41		
2-Methylnaphthalene	87.2	ug/L	1.0	10		01/10/17 11:01		
Naphthalene	210	ug/L	1.0	10	12/30/16 11:29	01/10/17 11:01	91-20-3	
Phenanthrene	0.73	ug/L	0.10	1	12/20/16 11:20	01/09/17 15:41	0E 01 0	



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Sample: MW-91A	Lab ID: 2047967005		Collected: 12/27/16 11:18		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	71	%.	25-150	1		01/09/17 15:41		
2-Fluorobiphenyl (S)	80	%.	25-150	10	12/30/16 11:29			
Terphenyl-d14 (S)	69	%.	25-150	1				
Ferphenyl-d14 (S)	66	%.	25-150	10	12/30/16 11:29	01/10/17 11:01	1718-51-0	
260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	ND	ug/L	40.0	10		12/29/16 18:20	67-64-1	
Benzene	1080	ug/L	5.0	10		12/29/16 18:20	71-43-2	
Bromodichloromethane	ND	ug/L	5.0	10		12/29/16 18:20	75-27-4	
Bromoform	ND	ug/L	5.0	10		12/29/16 18:20	75-25-2	
Bromomethane	ND	ug/L	5.0	10		12/29/16 18:20	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	20.0	10		12/29/16 18:20	78-93-3	
Carbon disulfide	ND	ug/L	10.0	10		12/29/16 18:20	75-15-0	
Carbon tetrachloride	ND	ug/L	5.0	10		12/29/16 18:20	56-23-5	
Chlorobenzene	ND	ug/L	5.0	10		12/29/16 18:20	108-90-7	
Chloroethane	ND	ug/L	5.0	10		12/29/16 18:20	75-00-3	
Chloroform	ND	ug/L	5.0	10		12/29/16 18:20		
Chloromethane	ND	ug/L	5.0	10		12/29/16 18:20		
,2-Dibromo-3-chloropropane	ND	ug/L	2.0	10		12/29/16 18:20		
Dibromochloromethane	ND	ug/L	5.0	10		12/29/16 18:20		
,2-Dibromoethane (EDB)	ND	ug/L	10.0	10		12/29/16 18:20		
Dichlorodifluoromethane	ND	ug/L	10.0	10		12/29/16 18:20		
,1-Dichloroethane	ND	ug/L	5.0	10		12/29/16 18:20		
,2-Dichloroethane	ND	ug/L	5.0	10		12/29/16 18:20		
,1-Dichloroethene	ND	ug/L	5.0	10		12/29/16 18:20		
sis-1,2-Dichloroethene	ND	ug/L	10.0	10		12/29/16 18:20		
rans-1,2-Dichloroethene	ND	ug/L	5.0	10		12/29/16 18:20		
,2-Dichloropropane	ND	ug/L	5.0	10		12/29/16 18:20		
sis-1,3-Dichloropropene	ND	ug/L	5.0	10		12/29/16 18:20		
rans-1,3-Dichloropropene	ND	ug/L	5.0	10		12/29/16 18:20		
Ethylbenzene	690	ug/L	5.0	10		12/29/16 18:20		
2-Hexanone	ND	ug/L	10.0	10		12/29/16 18:20		
sopropylbenzene (Cumene)	18.0	ug/L	10.0	10		12/29/16 18:20		
Methyl acetate	ND	ug/L	20.0	10		12/29/16 18:20		
Methylene Chloride	ND ND	•	5.0	10		12/29/16 18:20		
-Methyl-2-pentanone (MIBK)		ug/L						
	ND ND	ug/L	10.0	10 10		12/29/16 18:20		
Methyl-tert-butyl ether Styrene	ND ND	ug/L	5.0	10 10		12/29/16 18:20 12/29/16 18:20		
		ug/L	10.0			12/29/16 18:20		
,1,2,2-Tetrachloroethane	ND	ug/L	5.0	10				
etrachloroethene	ND	ug/L	5.0	10		12/29/16 18:20		
foluene	ND	ug/L	5.0	10		12/29/16 18:20		
,1,1-Trichloroethane	ND	ug/L	5.0	10		12/29/16 18:20		
,1,2-Trichloroethane	ND	ug/L	5.0	10		12/29/16 18:20		
Trichloroethene Trichloroethene	ND	ug/L	5.0	10		12/29/16 18:20	79-01-6	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-91A	Lab ID: 204	7967005	Collected: 12/27/	16 11:18	Received: 1	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Vinyl chloride	ND	ug/L	5.0	10		12/29/16 18:20	75-01-4	
m&p-Xylene	63.6	ug/L	20.0	10		12/29/16 18:20	179601-23-1	
o-Xylene	16.7	ug/L	10.0	10		12/29/16 18:20	95-47-6	
Surrogates								
Dibromofluoromethane (S)	91	%.	72-126	10		12/29/16 18:20	1868-53-7	
4-Bromofluorobenzene (S)	91	%.	68-124	10		12/29/16 18:20	460-00-4	
Toluene-d8 (S)	107	%.	79-119	10		12/29/16 18:20	2037-26-5	
Sample: MW-88A	Lab ID: 204	7967006	Collected: 12/27/	16 12:53	Received: 1	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Preparent	aration M	ethod: EPA 353	35		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	3 01/09/17 16:34	l	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		3 01/09/17 16:34 3 01/09/17 16:34		
Surrogates	ND	mg/L	1.0	'	12/30/10 10.30	0 1/03/17 10.5-	•	
n-Pentacosane (S)	58	%.	16-137	1	12/30/16 10:38	3 01/09/17 16:34	629-99-2	
p-Terphenyl (S)	59	%.	10-121	1		3 01/09/17 16:34		
B021 GCV BTEX, MTBE, GRO	Analytical Meth		015/8021					
0 11 0 0		"	50.0			04/04/47 40 50		
Gasoline Range Organics	79.0	ug/L	50.0	1		01/04/17 18:56	5	
Surrogates 4-Bromofluorobenzene (S)	92	%.	44-148	1		01/04/17 18:56	: 460.00.4	
4-Bromondorobenzene (3)	92	70.	44-140	ı		01/04/17 16.50	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Me	hod: EPA	A 3010			
Arsenic	0.0017	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:52	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:52	2 7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	0 01/06/17 12:52	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 12:52	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Me	thod: EPA	A 3005A			
Arsenic, Dissolved	ND	ua/l	1.0	1	12/20/16 10:11	5 01/06/17 14:38	2 7440-29 2	
Arsenic, Dissolved Chromium, Dissolved	ND ND	ug/L	1.0	1		5 01/06/17 14:38 5 01/06/17 14:38		
•		ug/L						
Lead, Dissolved	ND	ug/L	1.0	1		5 01/06/17 14:38		
Vanadium, Dissolved	ND	ug/L	5.0	1		5 01/06/17 14:38	3 7440-62-2	
7470 Mercury			170 Preparation Me			04/00/47 44:00	7400.07.0	
Mercury	ND	ug/L	0.20	1		9 01/03/17 11:35	7439-97-6	
7470 Mercury, Dissolved (LF)	•		170 Preparation Me			0.01/02/47 42:24	7420 07 6	
Mercury, Dissolved	ND	ug/L	0.20	1 tion Moth		9 01/03/17 12:21	/439-9/-b	
8270 MSSV PAH by SIM SEP	•		270 by SIM Prepara					
Acenaphthene	1.3	ug/L	0.10	1	12/30/16 11:29	9 01/09/17 16:01	83-32-9	
Acenaphthylene	0.10	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	208-96-8	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-88A	Lab ID: 204	7967006	Collected: 12/27/1	6 12:53	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparation	on Meth	od: EPA 3510			
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 206-44-0	
Fluorene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29			
2-Methylnaphthalene	ND	ug/L	0.10	1		01/09/17 16:0		
Naphthalene	0.23	ug/L	0.10	1		01/09/17 16:0		
Phenanthrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:0	1 85-01-8	
Pyrene	ND	ug/L	0.10	1		01/09/17 16:0		
Surrogates		~g/ –	00	•	,00,.00	0.7007	0 00 0	
2-Fluorobiphenyl (S)	77	%.	25-150	1	12/30/16 11:29	01/09/17 16:0	1 321-60-8	
erphenyl-d14 (S)	75	%.	25-150	1	12/30/16 11:29	01/09/17 16:0	1 1718-51-0	
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	15.6	ug/L	4.0	1		12/29/16 14:20	5 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 14:20		03
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 14:20		
Bromoform	ND ND	ug/L	0.50	1		12/29/16 14:20		
Bromomethane	ND ND	ug/L ug/L	0.50	1		12/29/16 14:20		L3
2-Butanone (MEK)	ND ND	ug/L	2.0	1		12/29/16 14:20		LJ
Carbon disulfide	ND ND	ug/L	1.0	1		12/29/16 14:20		
Carbon tetrachloride	ND ND	_	0.50	1		12/29/16 14:20		
		ug/L		1				
Chlorobenzene Chloroethane	ND ND	ug/L	0.50	1		12/29/16 14:20 12/29/16 14:20		
		ug/L	0.50					
Chloroform	ND	ug/L	0.50	1		12/29/16 14:20 12/29/16 14:20		
Chloromethane	ND	ug/L	0.50	1				
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 14:20		
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 14:20		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 14:20		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 14:20		
,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:20		
,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:20		
,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:20		
is-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 14:20		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:20		
,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 14:20		
is-1,3-Dichloropropene	ND	ug/L	0.50	1			6 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1			6 10061-02-6	
thylbenzene	ND	ug/L	0.50	1		12/29/16 14:20	6 100-41-4	
?-Hexanone	ND	ug/L	1.0	1		12/29/16 14:20	5 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 14:20		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-88A	Lab ID: 204	7967006	Collected: 12/27/1	6 12:53	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Metl	nod: EPA 50	030B/8260					
Methyl acetate	ND	ug/L	2.0	1		12/29/16 14:26	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 14:26	5 75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 14:26	3 108-10-1	
Methyl-tert-butyl ether	1.4	ug/L	0.50	1		12/29/16 14:26	6 1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 14:26	100-42-5	
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 14:26	79-34-5	
etrachloroethene	ND	ug/L	0.50	1		12/29/16 14:26	6 127-18-4	
oluene	ND	ug/L	0.50	1		12/29/16 14:26	5 108-88-3	
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:26		
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:26		
richloroethene	ND	ug/L	0.50	1		12/29/16 14:26		
richlorofluoromethane	ND	ug/L	0.50	1		12/29/16 14:26		
/inyl chloride	ND	ug/L	0.50	1		12/29/16 14:26		
n&p-Xylene	ND	ug/L	2.0	1			3 179601-23-1	
-Xylene	ND ND	-	1.0	1		12/29/16 14:26		
Surrogates	ND	ug/L	1.0	'		12/29/10 14.20	95-47-0	
Dibromofluoromethane (S)	90	%.	72-126	1		12/29/16 14:26	1868-53-7	
-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 14:26		
` ,	104	%. %.	79-119	1		12/29/16 14:26		
「oluene-d8 (S)	104	/0.	79-119	1		12/29/10 14.20	2037-20-3	
Sample: MW-99A	Lab ID: 204	7967007	Collected: 12/27/1	6 13:46	Received: 12	2/28/16 15:50	Matrix: Water	
Sample: MW-99A Parameters	Lab ID: 204	7967007 Units	Collected: 12/27/1	6 13:46 DF	Received: 12	2/28/16 15:50 Analyzed	Matrix: Water CAS No.	Qua
Parameters	Results	Units		DF	Prepared	Analyzed		Qua
Parameters 8015M DRO/ORO Organics	Results Analytical Meth	Units	Report Limit	DF ration M	Prepared ethod: EPA 3535	Analyzed	CAS No.	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40)	Results	Units	Report Limit	DF	Prepared ethod: EPA 3535	Analyzed 5 01/09/17 17:02	CAS No.	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates	Results Analytical Meth	Units nod: EPA 80 mg/L	Report Limit	DF ration M	Prepared ethod: EPA 3535 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02	CAS No.	Qua
Parameters 0015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S)	Results Analytical Methods ND ND	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF ration M 1 1	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02	CAS No.	Qua
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S)	Results Analytical Methods ND ND ND 33	Units mod: EPA 80 mg/L mg/L %. %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02	CAS No.	Qua
B015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) D-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Gasoline Range Organics	Results Analytical Methods ND ND ND 33 40	Units mod: EPA 80 mg/L mg/L %. %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02	CAS No. 2 2 2 2 629-99-2 2 84-15-1	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 1021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates	Analytical Meth ND ND 33 40 Analytical Meth	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121	DF ration M 1 1 1	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02	CAS No. 2 2 2 629-99-2 2 84-15-1	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S)	Results Analytical Method ND ND 33 40 Analytical Method ND 88	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0	DF ration M 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02	CAS No. 2 2 2 629-99-2 2 84-15-1	Qua
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 20-Terphenyl (S) 3021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 3020 MET ICPMS Arsenic	Results Analytical Method ND ND 33 40 Analytical Method ND 88 Analytical Method	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L	Report Limit	DF ration M 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/04/17 19:23	CAS No. 2 2 2 2 629-99-2 2 84-15-1 3 3 460-00-4	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 1021 GCV BTEX, MTBE, GRO 103 Casoline Range Organics 104 Casoline Range Organics 105 Casoline Range Organics 105 Casoline Range Organics 106 Casoline Range Organics 107 Casoline Range Organics 108	Results Analytical Method ND ND 33 40 Analytical Method ND 88 Analytical Method	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60	Report Limit 0.50 1.0 16-137 10-121 50.0 44-148 020 Preparation Methods 0.0010 0.0010	DF ration M 1 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/04/17 19:23 01/04/17 19:23	CAS No. 2 2 2 629-99-2 2 84-15-1 3 3 460-00-4 6 7440-38-2	Qua
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 2-Terphenyl (S) 3021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 3020 MET ICPMS Arsenic Chromium	Results Analytical Method ND ND 33 40 Analytical Method ND 88 Analytical Method	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L	Report Limit	DF ration M 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/04/17 19:23 01/04/17 19:23 01/06/17 12:56 01/06/17 12:56	CAS No. 2 2 2 629-99-2 2 84-15-1 3 3 460-00-4 6 7440-38-2 7440-47-3	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates -Bromofluorobenzene (S) 020 MET ICPMS Arsenic Chromium ead	Results Analytical Method ND 33 40 Analytical Method ND 88 Analytical Method ND ND ND	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L	Report Limit 0.50 1.0 16-137 10-121 50.0 44-148 020 Preparation Methods 0.0010 0.0010	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/04/17 19:23 01/04/17 19:23 01/06/17 12:56 01/06/17 12:56	CAS No. 2 2 2 629-99-2 2 84-15-1 3 3 460-00-4 5 7440-38-2 7440-47-3 7439-92-1	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (S) Description (S) 021 GCV BTEX, MTBE, GRO Disasoline Range Organics Disaso	Analytical Meth ND ND 33 40 Analytical Meth ND 88 Analytical Meth ND ND ND ND	Units mg/L mg/L %. nod: EPA 86 ug/L %. nod: EPA 66 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0010	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/04/17 19:23 01/04/17 19:23 01/06/17 12:56 01/06/17 12:56	CAS No. 2 2 2 629-99-2 2 84-15-1 3 3 460-00-4 5 7440-38-2 7440-47-3 7439-92-1	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO	Analytical Meth ND ND 33 40 Analytical Meth ND 88 Analytical Meth ND ND ND ND	Units mg/L mg/L %. nod: EPA 86 ug/L %. nod: EPA 66 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0010 0.0050	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/09/17 17:02 01/04/17 19:23 01/04/17 19:23 01/06/17 12:56 01/06/17 12:56 01/06/17 12:56	CAS No. 2 2 2 629-99-2 2 84-15-1 3 3 460-00-4 6 7440-38-2 7440-47-3 6 7439-92-1 7440-62-2	Qua



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-99A	Lab ID: 2047	7967007	Collected: 12/27/1	6 13:46	Received: 12	2/28/16 15:50 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 6	020 Preparation Meth	nod: EPA	3005A			
Lead, Dissolved Vanadium, Dissolved	ND 5.1	ug/L ug/L	1.0 5.0	1 1		01/06/17 14:42 01/06/17 14:42		
7470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:38	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:23	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparati	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	207-08-9	
Chrysene	ND	ug/L	0.10	1		01/09/17 16:21		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/09/17 16:21		
Fluoranthene	ND	ug/L	0.10	1		01/09/17 16:21		
Fluorene	ND	ug/L	0.10	1		01/09/17 16:21		
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/09/17 16:21		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/09/17 16:21		
Naphthalene	ND	ug/L	0.10	1		01/09/17 16:21		
Phenanthrene	ND	ug/L	0.10	1		01/09/17 16:21		
Pyrene	ND	ug/L	0.10	1		01/09/17 16:21		
Surrogates	ND	ug/L	0.10	· ·	12/30/10 11.23	01/03/17 10.21	123-00-0	
2-Fluorobiphenyl (S)	70	%.	25-150	1	12/30/16 11:29	01/09/17 16:21	321-60-8	
erphenyl-d14 (S)	65	%.	25-150	1		01/09/17 16:21		
3260 MSV Low Level	Analytical Meth			·	12,00,10 11120	0.7007.7.10.2.1		
Acetone	15.6	ug/L	4.0	1		12/29/16 14:44	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 14:44		00
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 14:44	-	
Bromoform	ND	ug/L ug/L	0.50	1		12/29/16 14:44		
Bromomethane	ND ND	ug/L ug/L	0.50	1		12/29/16 14:44		L3
P-Butanone (MEK)	ND ND	_	2.0	1		12/29/16 14:44		LJ
` ,		ug/L						
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 14:44		
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 14:44		
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 14:44		
Chloroethane	ND	ug/L	0.50	1		12/29/16 14:44		
Chloroform	ND	ug/L	0.50	1		12/29/16 14:44		
Chloromethane	ND	ug/L	0.50	1		12/29/16 14:44		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 14:44		
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 14:44	124-48-1	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-99A	Lab ID: 204	7967007	Collected: 12/27/	16 13:46	Received: 1	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 14:4	4 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 14:4	4 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:4	4 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:4	4 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:4	4 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 14:4	4 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:4	4 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 14:4	4 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1			4 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1			4 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 14:4		
2-Hexanone	ND ND	ug/L	1.0	1		12/29/16 14:4		
sopropylbenzene (Cumene)	ND ND	ug/L	1.0	1		12/29/16 14:4		
Methyl acetate	ND ND	ug/L ug/L	2.0	1		12/29/16 14:4		
Methylene Chloride	ND ND	-	0.50	1		12/29/16 14:4		
•		ug/L						
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 14:4		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 14:4		
Styrene	ND	ug/L	1.0	1		12/29/16 14:4		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 14:4		
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 14:4	_	
Toluene	ND	ug/L	0.50	1		12/29/16 14:4		
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:4		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:4	4 79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 14:4	4 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 14:4	4 75-69-4	
/inyl chloride	ND	ug/L	0.50	1		12/29/16 14:4	4 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 14:4	4 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 14:4	4 95-47-6	
Surrogates								
Dibromofluoromethane (S)	91	%.	72-126	1		12/29/16 14:4	4 1868-53-7	
4-Bromofluorobenzene (S)	92	%.	68-124	1		12/29/16 14:4	4 460-00-4	
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 14:4	4 2037-26-5	
Sample: MW-98A	Lab ID: 204	7967008	Collected: 12/27/	16 15:03	Received: 1	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	ration M	ethod: EPA 353	35		
Diesel Pange Organic (C10 C29)	ND	ma/l	0.50	1	12/20/16 10:29	R 01/00/17 17:0	n	
Diesel Range Organic (C10-C28)		mg/L	0.50			8 01/09/17 17:3		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	12/30/10 10:3	8 01/09/17 17:3	U	
•	E0	%.	16-137	1	12/20/16 10:29	R 01/00/17 17:0	0 620-00 2	
n-Pentacosane (S)	58 63	%. %.	10-137	1 1		8 01/09/17 17:3 8 01/09/17 17:3		
o-Terphenyl (S)	03	70.	10-121	ı	12/30/10 10:3	5 01/09/17 17:3	0 04-10-1	
3021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 19:4	9	
=		-						



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Pace Project No.: 2047967								
Sample: MW-98A	Lab ID: 2047	7967008	Collected: 12/27/1	6 15:03	Received: 12	2/28/16 15:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 80	015/8021					
Surrogates 4-Bromofluorobenzene (S)	87	%.	44-148	1		01/04/17 19:49	460-00-4	
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:00	7440-38-2	
Chromium	ND	mg/L	0.0010	1		01/06/17 13:00		
_ead	ND	mg/L	0.0010	1		01/06/17 13:00		
/anadium	ND	mg/L	0.0050	1		01/06/17 13:00		
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:54	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:54	7440-47-3	
₋ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:54	7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:54	7440-62-2	
7470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:44	7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:25	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	0.44	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	208-96-8	
Anthracene	ND	ug/L	0.10	1		01/09/17 16:41		
Benzo(a)anthracene	ND	ug/L	0.10	1		01/09/17 16:41		
Benzo(a)pyrene	ND	ug/L	0.10	1		01/09/17 16:41		
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/09/17 16:41		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/09/17 16:41		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/09/17 16:41		
Chrysene	ND	ug/L	0.10	1		01/09/17 16:41		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/09/17 16:41		
Fluoranthene	ND	ug/L	0.10	1		01/09/17 16:41		
Fluorene	ND	ug/L	0.10	1		01/09/17 16:41		
ndeno(1,2,3-cd)pyrene 2-Methylnaphthalene	ND ND	ug/L ug/L	0.10 0.10	1 1		01/09/17 16:41 01/09/17 16:41		
Naphthalene	ND ND	ug/L ug/L	0.10	1		01/09/17 16:41		
Phenanthrene	ND ND	ug/L ug/L	0.10	1		01/09/17 16:41		
Pyrene	ND ND	ug/L	0.10	1		01/09/17 16:41		
Surrogates	ND	ug/L	0.10	'	12/00/10 11.29	01/00/17 10.41	120-00-0	
2-Fluorobiphenyl (S)	68	%.	25-150	1	12/30/16 11:29	01/09/17 16:41	321-60-8	
Terphenyl-d14 (S)	67	%.	25-150	1		01/09/17 16:41		
3260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	14.8	ug/L	4.0	1		12/29/16 15:02	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 15:02		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-98A	Lab ID: 204	7967008	Collected: 12/27/1	6 15:03	Received:	12/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 15:02	2 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 15:02	2 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 15:02	2 74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 15:02	2 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 15:02	2 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 15:02	2 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 15:02	2 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 15:02	2 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 15:02	2 67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 15:02	2 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 15:02	2 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 15:02	2 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 15:02	2 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 15:02	2 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:02	2 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:02	2 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:02	2 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 15:02	2 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:02	2 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 15:02	2 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:02	2 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:02	2 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 15:02	2 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 15:02	2 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 15:02	2 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 15:02		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 15:02		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 15:02	2 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 15:02	2 1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 15:02	2 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 15:02		
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 15:02		
Toluene	ND	ug/L	0.50	1		12/29/16 15:02		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:02		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:02	2 79-00-5	
richloroethene	ND	ug/L	0.50	1		12/29/16 15:02		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 15:02		
/inyl chloride	ND	ug/L	0.50	1		12/29/16 15:02		
m&p-Xylene	ND	ug/L	2.0	1			2 179601-23 -1	l
o-Xylene	ND	ug/L	1.0	1		12/29/16 15:02		
Surrogates	1,12	- y-	1.0	•		,_5, 10 10.02	_ 00 0	
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 15:02	2 1868-53-7	
I-Bromofluorobenzene (S)	94	%.	68-124	1		12/29/16 15:02		
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 15:02		



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Sample: MW-30A	Lab ID: 204	7967009	Collected: 12/27/1	6 15:53	Received: 12	2/28/16 15:50	Matrix: Water	_
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/09/17 17:58	3	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	12/30/16 10:38	01/09/17 17:58	3	
n-Pentacosane (S)	38	%.	16-137	1	12/30/16 10:38	01/09/17 17:58	3 629-99-2	
p-Terphenyl (S)	39	%.	10-121	1	12/30/16 10:38	01/09/17 17:58	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/04/17 20:15	5	
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/04/17 20:15	5 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	3010			
Arsenic	0.0034	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:04	1 7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:04	4 7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:04	4 7439-92-1	
/anadium	ND	mg/L	0.0050	1		01/06/17 13:04		
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	•	020 Preparation Meth	nod: EPA	3005A			
Arsenic, Dissolved	2.5		1.0	1		01/06/17 14:58	2 7440 20 2	
Chromium, Dissolved	ND	ug/L ug/L	1.0	1		01/06/17 14:58		
•		J						
Lead, Dissolved /anadium, Dissolved	ND ND	ug/L ug/L	1.0 5.0	1 1	12/30/16 18:15	01/06/17 14:58		
		_				01/00/17 14.50	7 440-02-2	
7470 Mercury		nod: EPA 74	70 Preparation Meth		7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:46	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:27	7 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	1 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	1 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	1 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	1 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	1 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	1 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	1 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	1 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29			
Fluoranthene	ND	ug/L	0.10	1		01/09/17 17:01		
Fluorene	ND	ug/L	0.10	1	12/30/16 11:29			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29			
* * * * * * * * * * * * * * * * * * * *	ND	ug/L	0.10	1	12/30/16 11:29			
2-Methylnaphthalene								
2-Methylnaphthalene Naphthalene	ND ND	ug/L	0.10	1	12/30/16 11:29			



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Sample: MW-30A	Lab ID: 2047	7967009	Collected: 12/27/1	6 15:53	Received: 12	2/28/16 15:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3510			
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	84	%.	25-150	1		01/09/17 17:01		
Terphenyl-d14 (S)	80	%.	25-150	1	12/30/16 11:29	01/09/17 17:01	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	35.3	ug/L	4.0	1		12/29/16 15:20	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 15:20	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 15:20	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 15:20	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 15:20	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 15:20	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 15:20	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 15:20		
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 15:20		
Chloroethane	ND	ug/L	0.50	1		12/29/16 15:20		
Chloroform	ND	ug/L	0.50	1		12/29/16 15:20		
Chloromethane	0.51	ug/L	0.50	1		12/29/16 15:20		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 15:20		
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 15:20		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 15:20		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 15:20		
1,1-Dichloroethane	ND ND	-	0.50	1		12/29/16 15:20		
,		ug/L						
I,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:20		
,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:20		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 15:20		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:20		
I,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 15:20		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:20		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:20		
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 15:20		
2-Hexanone	ND	ug/L	1.0	1		12/29/16 15:20		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 15:20		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 15:20	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 15:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 15:20	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 15:20	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 15:20	100-42-5	
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 15:20	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 15:20	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 15:20		
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:20	71-55-6	
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:20		
Trichloroethene	ND	ug/L	0.50	1		12/29/16 15:20		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 15:20		
/inyl chloride	ND	ug/L	0.50	1		12/29/16 15:20		
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 15:20		



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Complex MW 204	Lab ID: 004	7067000	Collected: 40/07/	10 15:50	Doortinal	10/00/16 15:50	Matrix: Mata:	
Sample: MW-30A	Lab ID: 2047	7967009	Collected: 12/27/	16 15:53	Received:	12/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	od: EPA 5	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		12/29/16 15:20	95-47-6	
Dibromofluoromethane (S)	91	%.	72-126	1		12/29/16 15:20	1868-53-7	
4-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 15:20		
Toluene-d8 (S)	103	%.	79-119	1		12/29/16 15:20		
Sample: FB-122716	Lab ID: 2047	7967010	Collected: 12/27/	16 15:58	Received:	12/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 8	 015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/04/17 20:42	2	
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/04/17 20:42	2 460-00-4	
8260 MSV Low Level	Analytical Meth	od: EPA 5	030B/8260					
Acetone	4.9	ug/L	4.0	1		12/29/16 15:38	8 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 15:38	3 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 15:38	3 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 15:38	3 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 15:38	3 74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 15:38	3 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 15:38	3 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 15:38	3 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 15:38	3 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 15:38	3 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 15:38	3 67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 15:38	3 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 15:38	3 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 15:38	3 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 15:38	3 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 15:38	8 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:38	3 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:38	3 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:38		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 15:38		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:38		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 15:38		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:38		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:38		
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 15:38		
2-Hexanone	ND	ug/L	1.0	1		12/29/16 15:38		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 15:38		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 15:3		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 15:38		
4-Methyl-2-pentanone (MIBK)	ND	ug/L ug/L	1.0	1		12/29/16 15:38		

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: FB-122716	Lab ID: 204	7967010	Collected: 12/27/1	6 15:58	Received:	12/28/16 15:50 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 15:38	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 15:38	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 15:38	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 15:38	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 15:38	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:38	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 15:38	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 15:38		
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 15:38		
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 15:38		
o-Xylene	ND	ug/L	1.0	1		12/29/16 15:38		
Surrogates	ND	ug/L	1.0	•		12/20/10 10:00	30 47-0	
Dibromofluoromethane (S)	91	%.	72-126	1		12/29/16 15:38	1868-53-7	
4-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 15:38		
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 15:38		
Tolderic do (d)	104	70.	73-113	'		12/23/10 13.30	2007-20-0	
Sample: TB122816	Lab ID: 204	7967011	Collected: 12/28/1	6 00:00	Received:	12/28/16 15:50 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	Analytical Meth	nod: EPA 80 ug/L	50.0	1		01/04/17 21:08		
Gasoline Range Organics Surrogates	•			1		01/04/17 21:08 01/04/17 21:08		
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	ND	ug/L %.	50.0 44-148					
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level	ND 87	ug/L %.	50.0 44-148				460-00-4	C9
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone	ND 87 Analytical Meth	ug/L %. nod: EPA 50	50.0 44-148 030B/8260	1		01/04/17 21:08	460-00-4 67-64-1	C9
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene	ND 87 Analytical Meth 35.1	ug/L %. nod: EPA 50 ug/L ug/L	50.0 44-148 030B/8260 4.0	1		01/04/17 21:08 12/29/16 15:56	460-00-4 67-64-1 71-43-2	C9
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane	ND 87 Analytical Meth 35.1 ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50	1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4	C9
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform	ND 87 Analytical Meth 35.1 ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50	1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2	C9
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane	ND 87 Analytical Meth 35.1 ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50	1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK)	ND 87 Analytical Meth 35.1 ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50	1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide	ND 87 Analytical Meth 35.1 ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0	1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50	1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 2.0 1.0 0.50 0.50	1 1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroform	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroform Chloroform Chloromethane	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 2.0 1.0 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroform Chloromethane 1,2-Dibromo-3-chloropropane	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	1 1 1 1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chlorothane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND N	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 0.50 0.50 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane (EDB)	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND N	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 0.50 0.50 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1 106-93-4	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane (EDB) Dichlorodifluoromethane	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND N	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 0.50 0.50 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1 106-93-4 75-71-8	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane (EDB) Dichlorodifluoromethane 1,1-Dichloroethane	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND N	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 0.50 0.50 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1 106-93-4 75-71-8 75-34-3	
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chlorothane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane	ND 87 Analytical Meth 35.1 ND ND ND ND ND ND ND ND ND N	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50 0.50 0.50 0.50 0.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		01/04/17 21:08 12/29/16 15:56 12/29/16 15:56	460-00-4 67-64-1 71-43-2 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 67-66-3 74-87-3 96-12-8 124-48-1 106-93-4 75-71-8 75-34-3 107-06-2	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: TB122816	Lab ID: 20	047967011	Collected: 12/28/1	16 00:00	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3260 MSV Low Level	Analytical M	ethod: EPA 50	030B/8260					
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 15:50	6 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:50	6 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 15:50	6 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:50	6 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:50	6 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 15:50	6 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 15:50	6 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 15:50	6 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 15:50	6 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 15:50		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 15:50		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 15:50		
Styrene	ND	ug/L	1.0	1		12/29/16 15:50		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 15:50		
Tetrachloroethene	ND ND	ug/L	0.50	1		12/29/16 15:50		
Toluene	ND ND	ug/L	0.50	1		12/29/16 15:50		
1,1,1-Trichloroethane	ND	ug/L ug/L	0.50	1		12/29/16 15:50		
• •		-				12/29/16 15:50		
1,1,2-Trichloroethane	ND	ug/L	0.50	1				
Trichloroethene	ND	ug/L	0.50	1		12/29/16 15:50		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 15:50		
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 15:50		
m&p-Xylene	ND	ug/L	2.0	1			6 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 15:50	6 95-47-6	
Surrogates	00	0/	70.400			40/00/40 45 5	0 4000 50 7	
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 15:50		
4-Bromofluorobenzene (S)	92	%.	68-124	1		12/29/16 15:50		
Toluene-d8 (S)	105	%.	79-119	1		12/29/16 15:50	6 2037-26-5	
Sample: EB-122816	Lab ID: 20	047967012	Collected: 12/28/1	16 08:51	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical M	ethod: EPA 80	015B Modified Prepa	ration Me	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 16:3	1	
Oil Range Organics (>C28-C40)	ND	-	1.0	1		01/11/17 16:3		
Surrogates	IND	mg/L	1.0		12/30/10 10.30	01/11/11 10.3	1	
n-Pentacosane (S)	75	%.	16-137	1	12/30/16 10:38	01/11/17 16:3	1 629-99-2	
o-Terphenyl (S)	65	%.	10-137	1		01/11/17 16:3		
o respirency (o)	00	70.	10-121	'	12/00/10 10:30	51/11/17 10.5	1 UT-1U-1	
3021 GCV BTEX, MTBE, GRO	Analytical M	ethod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/04/17 22:2	7	
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/04/17 22:2	7 460-00-4	
6020 MET ICPMS	Analytical M	ethod: EPA 60	020 Preparation Met	hod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:0	7 7440-38-2	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: EB-122816	Lab ID: 204	7967012	Collected: 12/28/1	16 08:51	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Met	hod: EPA	3010			
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:0	7 7440-47-3	
_ead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:0	7 7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:0	7 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:02	2 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:02	2 7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:0	2 7439-92-1	
anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:02	2 7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Met	hod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:48	3 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	470 Preparation Met	hod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:33	3 7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
cenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	0 83-32-9	
cenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	208-96-8	
nthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	120-12-7	
enzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	56-55-3	
enzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	50-32-8	
enzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	205-99-2	
enzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	53-70-3	
luoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	206-44-0	
luorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	0 86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	193-39-5	
-Methylnaphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	91-57-6	
laphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	91-20-3	
rhenanthrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	0 85-01-8	
Pyrene Surrogates	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	129-00-0	
!-Fluorobiphenyl (S)	71	%.	25-150	1	12/31/16 11:49	01/09/17 17:20	321-60-8	
erphenyl-d14 (S)	78	%.	25-150	1		01/09/17 17:20		
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
cetone	24.9	ug/L	4.0	1		12/29/16 16:13	3 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 16:13	3 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 16:13	3 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 16:13	3 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 16:1:		L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 16:1:		-
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 16:1:		

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: EB-122816	Lab ID: 204	17967012	Collected: 12/28/1	6 08:51	Received: 12/28/16 15:5	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared Analyz	ed CAS No.	Qual
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260				
Carbon tetrachloride	ND	ug/L	0.50	1	12/29/16	16:13 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/29/16	16:13 108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/29/16	16:13 75-00-3	
Chloroform	ND	ug/L	0.50	1	12/29/16	16:13 67-66-3	
Chloromethane	0.53	ug/L	0.50	1	12/29/16	16:13 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/29/16	16:13 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/29/16	16:13 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/29/16	16:13 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/29/16	16:13 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/29/16	16:13 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/29/16	16:13 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	12/29/16	16:13 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		16:13 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		16:13 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		16:13 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		16:13 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		16:13 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		16:13 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		16:13 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		16:13 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		16:13 79-20-9	
Methylene Chloride	ND ND	ug/L	0.50	1		16:13 75-20-9 16:13 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		16:13	
Methyl-tert-butyl ether	ND ND	ug/L	0.50	1		16:13 1634-04-4	
Styrene	ND ND	ug/L ug/L	1.0	1		16:13 1034-04-4 16:13 100-42-5	
1,1,2,2-Tetrachloroethane	ND ND	-	0.50	1		16:13 79-34-5	
Tetrachloroethene	ND ND	ug/L	0.50	1		16:13	
Toluene	ND ND	ug/L	0.50	1		16:13 127-16 -4 16:13 108-88-3	
		ug/L					
1,1,1-Trichloroethane	ND	ug/L	0.50	1		16:13 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		16:13 79-00-5	
Trichloroethene	ND	ug/L	0.50	1		16:13 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		16:13 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		16:13 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		16:13 179601-23-1	
o-Xylene	ND	ug/L	1.0	1	12/29/16	16:13 95-47-6	
Surrogates	04	0/	70.400		40/00/40	10.40 4000 50 7	
Dibromofluoromethane (S)	91	%.	72-126	1		16:13 1868-53-7	
4-Bromofluorobenzene (S)	91	%.	68-124	1		16:13 460-00-4	
Toluene-d8 (S)	104	%.	79-119	1	12/29/16	16:13 2037-26-5	
Sample: MW-16C	Lab ID: 204	17967013	Collected: 12/28/1	6 09:27	Received: 12/28/16 15:5	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared Analyz	ed CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 80	D15B Modified Prepa	ration Me	ethod: EPA 3535		-
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38 01/11/17	16·59	
Dieser Nange Organie (C10-C20)	שאו	mg/L	0.30		12/30/10 10.30 01/11/17	10.00	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-16C	Lab ID: 2047	7967013	Collected: 12/28/1	6 09:27	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	od: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	12/30/16 10:38	01/11/17 16:59	9	
n-Pentacosane (S)	41	%.	16-137	1	12/30/16 10:38	01/11/17 16:59	9 629-99-2	
o-Terphenyl (S)	51	%.	10-121	1	12/30/16 10:38	01/11/17 16:59	9 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/04/17 21:3	4	
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/04/17 21:3	4 460-00-4	
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Met	nod: EPA	3010			
Arsenic	0.0017	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:1	9 7440-38-2	
Chromium	0.0094	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:1	9 7440-47-3	
_ead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:1	9 7439-92-1	
/anadium	0.024	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:1	9 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Met	nod: EPA	3005A			
Arsenic, Dissolved	1.7	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:0	5 7440-38-2	
Chromium, Dissolved	9.3	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:0	5 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:0	5 7439-92-1	
/anadium, Dissolved	24.3	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:0	5 7440-62-2	
470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Met	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:50	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	170 Preparation Met	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:3	5 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:4	0 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:4	0 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:4	0 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:4	0 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:4	0 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:4	0 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:4	0 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:4	0 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:4	0 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/09/17 17:4		
Fluoranthene	ND	ug/L	0.10	1		01/09/17 17:4		
Fluorene	ND	ug/L	0.10	1		01/09/17 17:4		
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/09/17 17:4		
2-Methylnaphthalene	0.19	ug/L	0.10	1		01/09/17 17:4		
Naphthalene	0.12	ug/L	0.10	1		01/09/17 17:4		
Phenanthrene	0.15	ug/L	0.10	1		01/09/17 17:4		
		y -	5.10				· •	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-16C	Lab ID: 204	7967013	Collected: 12/28/1	6 09:27	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3510			
Surrogates								
2-Fluorobiphenyl (S)	72	%.	25-150	1	12/31/16 11:49	01/09/17 17:40	321-60-8	
Terphenyl-d14 (S)	75	%.	25-150	1	12/31/16 11:49	01/09/17 17:40) 1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	18.9	ug/L	4.0	1		12/29/16 16:32	2 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 16:32	2 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 16:32	2 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 16:32	2 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 16:32	2 74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 16:32	2 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 16:32	2 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 16:32	2 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 16:32		
Chloroethane	ND	ug/L	0.50	1		12/29/16 16:32		
Chloroform	ND	ug/L	0.50	1		12/29/16 16:32		
Chloromethane	ND	ug/L	0.50	1		12/29/16 16:32		
,2-Dibromo-3-chloropropane	ND ND	ug/L	0.20	1		12/29/16 16:32		
Dibromochloromethane	ND ND	•		1		12/29/16 16:32		
		ug/L	0.50	1				
,2-Dibromoethane (EDB)	ND	ug/L	1.0			12/29/16 16:32		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 16:32		
I,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 16:32		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 16:32		
,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 16:32		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 16:32		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 16:32	2 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 16:32	2 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 16:32	2 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 16:32	2 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 16:32	2 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 16:32	2 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 16:32	2 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 16:32	2 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 16:32	2 75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 16:32		
Methyl-tert-butyl ether	2.0	ug/L	0.50	1		12/29/16 16:32		
Styrene	ND	ug/L	1.0	1		12/29/16 16:32		
1,1,2,2-Tetrachloroethane	ND ND	ug/L ug/L	0.50	1		12/29/16 16:32		
Tetrachloroethene	ND ND	•		1		12/29/16 16:32		
Tetrachioroethene Foluene	ND ND	ug/L	0.50	1		12/29/16 16:32		
		ug/L	0.50					
I,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 16:32		
I,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 16:32		
Trichloroethene	ND	ug/L	0.50	1		12/29/16 16:32		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 16:32		
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 16:32		
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 16:32	2 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 16:32	2 95-47-6	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-16C	Lab ID: 204	7967013	Collected: 12/28/1	6 09:27	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 16:3	2 1868-53-7	
4-Bromofluorobenzene (S)	94	%.	68-124	1		12/29/16 16:3		
oluene-d8 (S)	104	%.	79-119	1		12/29/16 16:3	2 2037-26-5	
Sample: WWTP-1	Lab ID: 204	7967014	Collected: 12/28/1	6 10:19	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	1.0	mg/L	0.50	1	12/30/16 10:38	01/11/17 17:2	7	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		01/11/17 17:2		
n-Pentacosane (S)	48	%.	16-137	1	12/30/16 10:38	01/11/17 17:2	7 629-99-2	
p-Terphenyl (S)	78	%.	10-121	1		01/11/17 17:2		
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	113	ug/L	50.0	1		01/04/17 22:0	0	
Surrogates I-Bromofluorobenzene (S)	92	%.	44-148	1		01/04/17 22:0	0 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	0.0020	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:2	3 7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:2	3 7440-47-3	
_ead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:2	3 7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:2	3 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:0	9 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:0	9 7440-47-3	
∟ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:0	9 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:0	9 7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:5	2 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:3	7 7439-97-6	
3270 MSSV PAH by SIM SEP	-	nod: EPA 82	270 by SIM Preparati					
Acenaphthene	5.7	ug/L	0.10	1		01/09/17 18:0		
Acenaphthylene	0.59	ug/L	0.10	1		01/09/17 18:0		
Anthracene	0.67	ug/L	0.10	1	12/31/16 11:49			
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:0	0 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:0	0 50-32-8	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: WWTP-1	Lab ID: 20	47967014	Collected: 12/28/1	16 10:19	Received: 12	2/28/16 15:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Me	thod: EPA 8	270 by SIM Preparat	ion Meth	od: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	53-70-3	
- Fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	206-44-0	
luorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	193-39-5	
-Methylnaphthalene	0.81	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	91-57-6	
laphthalene	0.88	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	91-20-3	
Phenanthrene	0.41	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	85-01-8	
Pyrene	ND	ug/L	0.10	1		01/09/17 18:00		
Surrogates		- 3						
?-Fluorobiphenyl (S)	70	%.	25-150	1	12/31/16 11:49	01/09/17 18:00	321-60-8	
erphenyl-d14 (S)	72	%.	25-150	1	12/31/16 11:49	01/09/17 18:00	1718-51-0	
3260 MSV Low Level	Analytical Me	thod: EPA 5	030B/8260					
cetone	15.6	ug/L	4.0	1		12/29/16 16:50	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 16:50	71-43-2	
romodichloromethane	ND	ug/L	0.50	1		12/29/16 16:50	75-27-4	
romoform	ND	ug/L	0.50	1		12/29/16 16:50	75-25-2	
romomethane	ND	ug/L	0.50	1		12/29/16 16:50	74-83-9	L3
-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 16:50		
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 16:50		
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 16:50		
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 16:50	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 16:50	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 16:50	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 16:50	74-87-3	
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 16:50		
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 16:50	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 16:50		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 16:50		
,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 16:50		
.2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 16:50		
,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 16:50	75-35-4	
is-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 16:50		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 16:50		
,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 16:50		
is-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 16:50		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 16:50		
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 16:50		
-Hexanone	ND	ug/L	1.0	1		12/29/16 16:50		
sopropylbenzene (Cumene)	5.3	ug/L	1.0	1		12/29/16 16:50		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 16:50		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 16:50		
4-Methyl-2-pentanone (MIBK)	ND ND	ug/L ug/L	1.0	1		12/29/16 16:50		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: WWTP-1	Lab ID: 204	7967014	Collected: 12/28/1	16 10:19	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Methyl-tert-butyl ether	1.8	ug/L	0.50	1		12/29/16 16:50	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 16:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 16:50	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 16:50	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 16:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 16:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 16:50	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 16:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 16:50	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 16:50		
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 16:50		
o-Xylene	ND	ug/L	1.0	1		12/29/16 16:50		
Surrogates	110	~9/ -	7.0	•		, , 10 10.00	50 0	
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 16:50	1868-53-7	
4-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 16:50		
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 16:50		
(-)								
Sample: MW-B1	Lab ID: 204	7967015	Collected: 12/28/1	16 11:37	Received: 12	2/28/16 15:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 17:55		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/11/17 17:55		
Surrogates		9/ =		•	,	0.7.17.11		
n-Pentacosane (S)	53	%.	16-137	1	12/30/16 10:38	01/11/17 17:55	629-99-2	
o-Terphenyl (S)	65	%.	10-121	1		01/11/17 17:55		
8021 GCV BTEX, MTBE, GRO	Analytical Meth		015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 00:38		
Surrogates		•						
4-Bromofluorobenzene (S)	91	%.	44-148	1		01/05/17 00:38	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Met	hod: EPA	3010			
Arsenic	0.0050	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:27	7440-38-2	
Chromium	0.018	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:27	7440-47-3	
Lead	0.0066	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:27	7439-92-1	
Vanadium	0.056	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:27	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Met	hod: EPA	3005A			
Arsenic, Dissolved	1.0	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:13	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/06/17 15:13		
Lead, Dissolved	ND	ug/L	1.0	1		01/06/17 15:13		
Vanadium, Dissolved	ND ND		5.0	1		01/06/17 15:13		
variaulum, Dissolved	ND	ug/L	5.0	ı	12/30/16 18:15	01/06/17 15:13	1440-02-2	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: MW-B1	Lab ID: 204	7967015	Collected: 12/28/1	6 11:37	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:5	4 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	470 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:3	9 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:2	0 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:2	0 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:2	0 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:2	0 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:2	0 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49			
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49			
Fluoranthene	ND ND	•	0.10	1	12/31/16 11:49			
		ug/L						
luorene	ND	ug/L	0.10	1	12/31/16 11:49			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49			
-Methylnaphthalene	ND	ug/L	0.10	1	12/31/16 11:49			
laphthalene	ND	ug/L	0.10	1	12/31/16 11:49			
Phenanthrene	ND	ug/L	0.10	1	12/31/16 11:49			
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:2	0 129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	68	%.	25-150	1	12/31/16 11:49			
Ferphenyl-d14 (S)	60	%.	25-150	1	12/31/16 11:49	01/09/17 18:2	0 1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	9.4	ug/L	4.0	1		12/29/16 17:0	8 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 17:0	8 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 17:0	8 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 17:0	8 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 17:0	8 74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 17:0	8 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 17:0		
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 17:0		
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 17:0		
Chloroethane	ND	ug/L	0.50	1		12/29/16 17:0		
Chloroform	ND	ug/L	0.50	1		12/29/16 17:0		
Chloromethane	ND	ug/L	0.50	1		12/29/16 17:0		
,2-Dibromo-3-chloropropane	114	ug/L ug/L	0.20	1		12/29/16 17:0		
,2-Dibromo-3-chloropropane Dibromochloromethane		•		1		12/29/16 17:0		
	ND ND	ug/L	0.50			12/29/16 17:0		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1				
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 17:0		
,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:0		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:0	8 107-06-2	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Parameters	Sample: MW-B1	Lab ID: 204	7967015	Collected: 12/28/1	16 11:37	Received: 12	2/28/16 15:50	Matrix: Water	
1,1-Dichloroethene ND ug/L 0.50 1 12/29/16 17:08 75:35-4 cis-1,2-Dichloroethene ND ug/L 1.0 1 12/29/16 17:08 156:69-9 2 trans-1,2-Dichloroethene ND ug/L 0.50 1 12/29/16 17:08 156:69-9 2 trans-1,3-Dichloropropane ND ug/L 0.50 1 12/29/16 17:08 156:69-5 1;2-Dichloropropane ND ug/L 0.50 1 12/29/16 17:08 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 1 12/29/16 17:08 10061-02-6 Ethylbenzene ND ug/L 0.50 1 12/29/16 17:08 10061-02-6 Ethylbenzene ND ug/L 0.50 1 12/29/16 17:08 10061-02-6 Ethylbenzene ND ug/L 0.50 1 12/29/16 17:08 10061-02-6 Ethylbenzene ND ug/L 0.50 1 12/29/16 17:08 10061-02-6 Ethylbenzene (Cumene) ND ug/L 1.0 1 12/29/16 17:08 98-82-8 Methyl acetate ND ug/L 1.0 1 12/29/16 17:08 98-82-8 Methyl acetate ND ug/L 0.50 1 12/29/16 17:08 98-82-8 Methylaene Chloride ND ug/L 0.50 1 12/29/16 17:08 98-82-8 Methyl-ene Chloride ND ug/L 0.50 1 12/29/16 17:08 98-02-9 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 12/29/16 17:08 1634-04-4 Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 12/29/16 17:08 1634-04-4 Methyl-2-pentanone (MIBK) ND ug/L 0.50 1 12/29/16 17:08 1634-04-4 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1634-04-4 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1634-04-4 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1634-04-5 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1634-04-4 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1634-04-4 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1634-04-4 NSyrene ND ug/L 0.50 1 12/29/16 17:08 17:08-04-5 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1868-3-7 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1868-3-7 NSyrene ND ug/L 0.50 1 12/29/16 17:08 17:08-05-5 NSyrene ND ug/L 0.50 1 12/29/16 17:08 17:08-05-5 NSyrene ND ug/L 0.50 1 12/29/16 17:08 17:08-5 NSyrene ND ug/L 0.50 1 12/29/16 17:08 17:08-5 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1868-3-7 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1868-3-7 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1868-3-7 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1868-3-7 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1868-3-7 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1868-3-7 NSyrene ND ug/L 0.50 1 12/29/16 17:08 1868-3-7 NSyrene ND ug/L 0.50 1	Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
cis-1_2-Dischloroethene ND ug/L 1.0 1 12/29/16 17:08 156-59-2 trans-1_2-Dischloroethene ND ug/L 0.50 1 12/29/16 17:08 156-60-5 cis-1_3-Dischloropropene ND ug/L 0.50 1 12/29/16 17:08 7006-10-15 trans-1_3-Dischloropropene ND ug/L 0.50 1 12/29/16 17:08 10061-02-6 Elhybenzene ND ug/L 0.50 1 12/29/16 17:08 100-11-4 2-Hexanone ND ug/L 0.50 1 12/29/16 17:08 98-17:86 Bopropylbenzene (Curnene) ND ug/L 1.0 1 12/29/16 17:08 99-17:86 Bopropylbenzene (Curnene) ND ug/L 1.0 1 12/29/16 17:08 99-17:86 Bopropylbenzene (Curnene) ND ug/L 0.50 1 12/29/16 17:08 99-17:86 Methylacettal ND ug/L 0.50 1 12/29/16 17:08 99-17:86 Methylacet Chiside <th< td=""><td>8260 MSV Low Level</td><td>Analytical Meth</td><td>nod: EPA 50</td><td>030B/8260</td><td></td><td></td><td></td><td></td><td></td></th<>	8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
trans-12-Dichloroethene ND ug/L 0.50 1 12/29/16 17/208 16/508 05 166-60-5 1.2-Dichloropropane ND ug/L 0.50 1 12/29/16 17/208 16/208 76/208 168-60-5 cis-1,3-Dichloropropene ND ug/L 0.50 1 12/29/16 17/208 10061-02-6 1601-01-5 Ethyblenzene ND ug/L 0.50 1 12/29/16 17/208 10061-02-6 1604-10-2 Ethyblenzene ND ug/L 0.50 1 12/29/16 17/208 96-17/208 1004-10-2-6 1604-10-2 2-14-29/16 17/208 1004-10-2-6 1 12/29/16 17/208 98-2-8 89-2-8-6 89-2-9-8 Methyl acetate ND ug/L 0.50 1 12/29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 77-80-9-2 4-48-29/16 17/208 78	1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:08	3 75-35-4	
1,2-Dichloropropane ND ug/L 0,50 1 12/29/16 17:08 78-87-5 cis-1,3-Dichloropropene ND ug/L 0,50 1 12/29/16 17:08 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0,50 1 12/29/16 17:08 10061-02-6 Ethylbenzene ND ug/L 1,0 1 12/29/16 17:08 10061-02-6 Ethylbenzene ND ug/L 1,0 1 12/29/16 17:08 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1,0 1 12/29/16 17:08 79-28-8 Isopropylbenzene (Cumene) ND ug/L 1,0 1 12/29/16 17:08 79-20-9 Methyl acetate ND ug/L 1,0 1 12/29/16 17:08 79-20-9 Methylacetate ND ug/L 1,0 1 12/29/16 17:08 79-20-9 Methylacetate ND ug/L 1,0 1 12/29/16 17:08 79-20-9 Methyl-2-pentanone (MIBK) ND ug/L 1,0 1 12/29/16 17:08 79-20-9 Methyl-2-pentanone (MIBK) ND ug/L 1,0 1 12/29/16 17:08 1061-01-1 Methyl-1-tre-tyl-1 ether ND ug/L 1,0 1 12/29/16 17:08 1061-01-1 Syrene ND ug/L 1,0 1 12/29/16 17:08 1061-01-1 Syrene ND ug/L 1,0 1 12/29/16 17:08 1061-01-1 Tetrachloroethane ND ug/L 1,0 1 12/29/16 17:08 1061-01-1 Toltuene ND ug/L 0,50 1 12/29/16 17:08 1061-01-1 Toltuene ND ug/L 0,50 1 12/29/16 17:08 1061-01-1 Toltuene ND ug/L 0,50 1 12/29/16 17:08 1061-01-1 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 1061-01-1 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 1061-01-1 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 1061-01-1 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 1061-01-1 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0,50 1 12/29/16 17:08 79-00-5 Tric	cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 17:08	3 156-59-2	
cis-1,3-Dichloropropene ND ug/L 0.50 1 12/28/16 17:08 10061-01-5 Etmyloenzene ND ug/L 0.50 1 12/28/16 17:08 10061-02-6 Ethyloenzene ND ug/L 0.50 1 12/29/16 17:08 100-11-4 2-Hexanone ND ug/L 1.0 1 12/29/16 17:08 100-11-4 2-Hexanone ND ug/L 1.0 1 12/29/16 17:08 59-78-6 Boptoplopbenzene (Curnene) ND ug/L 1.0 1 12/29/16 17:08 59-20-9 Methyl acetate ND ug/L 0.50 1 12/29/16 17:08 79-20-9 Methyl-terrburd ND ug/L 0.50 1 12/29/16 17:08 79-20-9 Methyl-terrburd ether ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Styrene ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Tetrachloroethane ND ug/L 0.50 <th< td=""><td>trans-1,2-Dichloroethene</td><td>ND</td><td>ug/L</td><td>0.50</td><td>1</td><td></td><td>12/29/16 17:08</td><td>3 156-60-5</td><td></td></th<>	trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:08	3 156-60-5	
trans-1,3-Dichloropropene ND ug/L 0.50 1 12/29/16 17:08 10061-02-6 Ethylbenzene ND ug/L 0.50 1 12/29/16 17:08 100-41-4 2-Hexanone ND ug/L 1.0 1 12/29/16 17:08 100-41-4 2-Hexanone ND ug/L 1.0 1 12/29/16 17:08 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 1 12/29/16 17:08 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 1 12/29/16 17:08 591-78-6 Isopropylbenzene (Cumene) ND ug/L 0.50 1 12/29/16 17:08 98-82-8 Methyl acetate ND ug/L 0.50 1 12/29/16 17:08 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 0.50 1 12/29/16 17:08 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 0.50 1 12/29/16 17:08 108-10-1 Methyl-ten-buyl ether ND ug/L 0.50 1 12/29/16 17:08 108-10-1 Methyl-ten-buyl ether ND ug/L 0.50 1 12/29/16 17:08 108-40-4 Styrene ND ug/L 0.50 1 12/29/16 17:08 108-40-4 Styrene ND ug/L 0.50 1 12/29/16 17:08 100-42-5 11,12,2-Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 100-42-5 11,12,2-Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 108-88-3 1,1,1-17ichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-34-5 15-10-4 ND ug/L 0.50 1 12/29/16 17:08 79-00-5 11,12-17ichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 17ichlorofluoromethane ND ug/L 0.50 1 12/29/16 17:08 79-00-6 17ichlorofluoromethane ND ug/L 0.50 1 12/29/16 17:08 79-00-6 17ichlorofluoromethane ND ug/L 0.50 1 12/29/16 17:08 75-01-4 mβp-Xylene ND ug/L 0.50 1 12/29/16 17:08 75-01-4 mβp-Xylene ND ug/L 0.50 1 12/29/16 17:08 75-01-4 mβp-Xylene ND ug/L 0.50 1 12/29/16 17:08 95-47-6 Surrogates Dibromofluoromethane (S) 92 % 72-126 1 12/29/16 17:08 95-47-6 Surrogates Dibromofluoromethane (S) 92 % 72-126 1 12/29/16 17:08 178-601-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-601-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-601-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-601-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-61-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-601-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-61-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-61-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-61-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-	1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 17:08	3 78-87-5	
trans-1,3-Dichloropropene ND ug/L 0.50 1 12/29/16 17:08 10061-02-6 Ethylbenzene ND ug/L 0.50 1 12/29/16 17:08 100-41-4 2-Hexanone ND ug/L 1.0 1 12/29/16 17:08 100-41-4 2-Hexanone ND ug/L 1.0 1 12/29/16 17:08 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 1 12/29/16 17:08 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 1 12/29/16 17:08 591-78-6 Isopropylbenzene (Cumene) ND ug/L 0.50 1 12/29/16 17:08 98-82-8 Methyl acetate ND ug/L 0.50 1 12/29/16 17:08 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 0.50 1 12/29/16 17:08 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 0.50 1 12/29/16 17:08 108-10-1 Methyl-ten-buyl ether ND ug/L 0.50 1 12/29/16 17:08 108-10-1 Methyl-ten-buyl ether ND ug/L 0.50 1 12/29/16 17:08 108-40-4 Styrene ND ug/L 0.50 1 12/29/16 17:08 108-40-4 Styrene ND ug/L 0.50 1 12/29/16 17:08 100-42-5 11,12,2-Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 100-42-5 11,12,2-Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 108-88-3 1,1,1-17ichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-34-5 15-10-4 ND ug/L 0.50 1 12/29/16 17:08 79-00-5 11,12-17ichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 17ichlorofluoromethane ND ug/L 0.50 1 12/29/16 17:08 79-00-6 17ichlorofluoromethane ND ug/L 0.50 1 12/29/16 17:08 79-00-6 17ichlorofluoromethane ND ug/L 0.50 1 12/29/16 17:08 75-01-4 mβp-Xylene ND ug/L 0.50 1 12/29/16 17:08 75-01-4 mβp-Xylene ND ug/L 0.50 1 12/29/16 17:08 75-01-4 mβp-Xylene ND ug/L 0.50 1 12/29/16 17:08 95-47-6 Surrogates Dibromofluoromethane (S) 92 % 72-126 1 12/29/16 17:08 95-47-6 Surrogates Dibromofluoromethane (S) 92 % 72-126 1 12/29/16 17:08 178-601-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-601-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-601-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-601-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-61-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-601-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-61-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-61-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-61-23-1 0-Xylene ND ug/L 0.50 1 12/29/16 17:08 178-	cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:08	3 10061-01-5	
2-Héxanone ND ug/L 1.0 1 12/29/16 17:08 591-78-6 lsopropylbenzene (Cumene) ND ug/L 1.0 1 12/29/16 17:08 98-82-8 Methyl acetate ND ug/L 2.0 1 12/29/16 17:08 98-82-8 Methylacetate ND ug/L 0.50 1 12/29/16 17:08 75-09-2 4-Methyl-en-Chloride ND ug/L 0.50 1 12/29/16 17:08 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 0.50 1 12/29/16 17:08 108-10-1 Methyl-ten-buyl ether ND ug/L 0.50 1 12/29/16 17:08 108-10-1 Methyl-ten-buyl ether ND ug/L 0.50 1 12/29/16 17:08 108-10-1 Methyl-ten-buyl ether ND ug/L 0.50 1 12/29/16 17:08 108-40-4 Styrene ND ug/L 0.50 1 12/29/16 17:08 103-40-4 Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 108-88-3 1,1,1-1-frichloroethane ND ug/L 0.50 1 12/29/16 17:08 108-88-3 1,1,1-1-frichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-6 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-6 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-01-6 ND ug/L 0.50 1 12/29/16 17:08 79-01-6 ND ug/L 0.50 1 12/29/16 17:08 75-01-4 Msp-xylene ND ug/L 0.50 1 12/29/16 17:08 75-01-4 Msp-xylene ND ug/L 0.50 1 12/29/16 17:08 75-01-4 Msp-xylene ND ug/L 0.50 1 12/29/16 17:08 75-01-4 Msp-xylene ND ug/L 0.50 1 12/29/16 17:08 75-01-4 Msp-xylene ND ug/L 0.50 1 12/29/16 17:08 10-23-1 0-Xylene N	trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:08	3 10061-02-6	
Sopropylbenzene (Cumene)	Ethylbenzene	ND	ug/L	0.50	1		12/29/16 17:08	3 100-41-4	
Isopropylenzene (Cumene) ND ug/L 1.0 1 12/29/16 17:08 98-82-8	2-Hexanone	ND	•	1.0	1		12/29/16 17:08	3 591-78-6	
Methyl acetate ND ug/L 2.0 1 12/29/16 17:08 79-20-9 Methylene Chloride ND ug/L 0.50 1 12/29/16 17:08 79-20-9 4-Methyl-2-pentanone (MIBK) ND ug/L 0.50 1 12/29/16 17:08 108-10-1 Methyl-terr-butyl ether ND ug/L 0.50 1 12/29/16 17:08 104-44-4 Styrene ND ug/L 0.50 1 12/29/16 17:08 104-42-5 1,1,2.2-Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Totlourne ND ug/L 0.50 1 12/29/16 17:08 71-56-6 1,1,2-Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L <th< td=""><td>Isopropylbenzene (Cumene)</td><td>ND</td><td></td><td>1.0</td><td>1</td><td></td><td>12/29/16 17:08</td><td>3 98-82-8</td><td></td></th<>	Isopropylbenzene (Cumene)	ND		1.0	1		12/29/16 17:08	3 98-82-8	
Methylene Chloride ND ug/L 0.50 1 12/29/16 17:08 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 12/29/16 17:08 108-10-1 Methyl-ter-butyl ether ND ug/L 0.50 1 12/29/16 17:08 1634-04-4 Styrene ND ug/L 1.0 1 12/29/16 17:08 100-42-5 1,1,2-2-Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Totlene ND ug/L 0.50 1 12/29/16 17:08 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-01-6 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-01-6 Trichloroethane ND ug/L 0		ND	_	2.0	1		12/29/16 17:08	3 79-20-9	
4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 12/29/16 17:08 108-10-1 Methyl-tert-butyl ether ND ug/L 0.50 1 12/29/16 17:08 108-40-4 Styrene ND ug/L 1.0 1 12/29/16 17:08 109-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Tetrachloroethane ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Toluene ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Toluene ND ug/L 0.50 1 12/29/16 17:08 79-34-5 Toluene ND ug/L 0.50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-01-6 Trichloroethane ND ug/L 0.50 1 12/29/16 17	•		-						
Methyl-tert-butyl ether ND ug/L 0.50 1 12/29/16 17:08 1634-04-4	•		-						
Styrene			-						
1,1,2,2-Tetrachloroethane	•		_						
Tetrachloroethene									
Toluene ND ug/L 0.50 1 12/29/16 17:08 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 71-55-6 1,1,1-Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-01-6 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 75-69-4 Vinyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-69-4 Vinyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-69-4 Vinyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-01-4 m&p-Xylene ND ug/L 2.0 1 12/29/16 17:08 179601-23-1 0-Xylene ND ug/L 1.0 1 12/29/16 17:08 95-47-6 Surrogates Dibromofluoromethane (S) 92 %. 72-126 1 12/29/16 17:08 1868-53-7 4-Bromofluorobenzene (S) 92 %. 68-124 1 12/29/16 17:08 460-00-4 Toluene-d8 (S) 104 %. 79-119 1 12/29/16 17:08 2037-26-5 Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 15:50 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 02/17/20/20/20/20/20/20/20/20/20/20/20/20/20/									
1,1,1-Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 71-55-6 1,1,2-Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-01-6 Trichlorothene ND ug/L 0.50 1 12/29/16 17:08 79-01-6 Trichlorothene ND ug/L 0.50 1 12/29/16 17:08 75-69-4 Vinyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-69-4 Vinyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-69-4 Vinyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-69-4 Vinyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-69-4 Surrogates ND ug/L 1.0 1 12/29/16 17:08 868-53-7 Surrogates Parameters Results Units <t< td=""><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td>-</td><td></td></t<>			-					-	
1,1,2-Trichloroethane ND ug/L 0.50 1 12/29/16 17:08 79-00-5 Trichloroethene ND ug/L 0.50 1 12/29/16 17:08 79-01-6 Trichloroethene ND ug/L 0.50 1 12/29/16 17:08 79-01-6 Trichlorofluoromethane ND ug/L 0.50 1 12/29/16 17:08 75-69-4 Vinyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-69-4 m&p-Xylene ND ug/L 2.0 1 12/29/16 17:08 75-01-4 surrogates ND ug/L 1.0 1 12/29/16 17:08 79-60-2-1 Surrogates Dibromofluoromethane (S) 92 % 72-126 1 12/29/16 17:08 95-47-6 Surrogates Dibromofluorobenzene (S) 92 % 68-124 1 12/29/16 17:08 460-00-4 Toluene-d8 (S) 104 % 79-119 1 12/28/16 15:50 Matrix: Water Parameters			•						
Trichloroethene ND ug/L 0.50 1 12/29/16 17:08 79-01-6 Trichlorofluoromethane ND ug/L 0.50 1 12/29/16 17:08 75-01-4 Winyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-01-4 m&p-Xylene ND ug/L 2.0 1 12/29/16 17:08 75-01-4 o-Xylene ND ug/L 1.0 1 12/29/16 17:08 75-01-4 Surrogates Dibromofluoromethane (S) 92 %. 72-126 1 12/29/16 17:08 1868-53-7 4-Bromofluorobenzene (S) 92 %. 68-124 1 12/29/16 17:08 460-00-4 Toluene-d8 (S) 104 %. 79-119 1 12/29/16 17:08 460-00-4 Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 15:50 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed </td <td>, ,</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	, ,		-						
Trichlorofluoromethane ND ug/L 0.50 1 12/29/16 17:08 75-69-4 Vinyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-01-4 m&p-Xylene ND ug/L 0.50 1 12/29/16 17:08 75-01-4 m&p-Xylene ND ug/L 1.0 1 12/29/16 17:08 95-47-6 Surrogates Dibromofluoromethane (S) 92 %. 72-126 1 12/29/16 17:08 1868-53-7 4-Bromofluorobenzene (S) 92 %. 68-124 1 12/29/16 17:08 460-00-4 Toluene-d8 (S) 104 %. 79-119 1 12/29/16 17:08 2037-26-5 Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 15:50 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04			_						
Vinyl chloride ND ug/L 0.50 1 12/29/16 17:08 75-01-4 m&p-Xylene ND ug/L 2.0 1 12/29/16 17:08 75-01-4 o-Xylene ND ug/L 1.0 1 12/29/16 17:08 95-47-6 Surrogates Dibromofluoromethane (S) 92 %. 72-126 1 12/29/16 17:08 1868-53-7 4-Bromofluorobenzene (S) 92 %. 68-124 1 12/29/16 17:08 460-00-4 Toluene-d8 (S) 104 %. 79-119 1 12/29/16 17:08 460-00-4 Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 17:08 460-00-4 Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38			-						
m&p-Xylene ND ug/L 2.0 1 12/29/16 17:08 179601-23-1 o-Xylene ND ug/L 1.0 1 12/29/16 17:08 95-47-6 Surrogates Dibromofluoromethane (S) 92 %. 72-126 1 12/29/16 17:08 1868-53-7 4-Bromofluorobenzene (S) 92 %. 68-124 1 12/29/16 17:08 460-00-4 Toluene-d8 (S) 104 %. 79-119 1 12/29/16 17:08 460-00-4 Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 15:50 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organics (>C028-C40) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 629-99-2 O-Terphenyl (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2			-						
o-Xylene ND ug/L 1.0 1 12/29/16 17:08 95-47-6 Surrogates Dibromofluoromethane (S) 92 %. 72-126 1 12/29/16 17:08 1868-53-7 4-Bromofluorobenzene (S) 92 %. 68-124 1 12/29/16 17:08 460-00-4 Toluene-d8 (S) 104 %. 79-119 1 12/29/16 17:08 2037-26-5 Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 15:50 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04	-		-						
Surrogates Dibromofluoromethane (S) 92 %. 72-126 1 12/29/16 17:08 1868-53-7 4-Bromofluorobenzene (S) 92 %. 68-124 1 12/29/16 17:08 460-00-4 Toluene-d8 (S) 104 %. 79-119 1 12/29/16 17:08 2037-26-5 Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 15:50 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 629-99-2 Oil Range Organics (>C28-C40) Analytical Method: EPA 8015/8021 1 12/30/16 10:38 01/11/17 18:23 629-99-2 0-Terphenyl (S) 4 <t< td=""><td></td><td></td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>			_						
Dibromofluoromethane (S) 92 %. 72-126 1 12/29/16 17:08 1868-53-7 4-Bromofluorobenzene (S) 92 %. 68-124 1 12/29/16 17:08 460-00-4 Toluene-d8 (S) 104 %. 79-119 1 12/29/16 17:08 2037-26-5 Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 15:50 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04		ND	ug/L	1.0	1		12/29/16 17:08	3 95-47-6	
4-Bromofluorobenzene (S) 92 %. 68-124 1 12/29/16 17:08 460-00-4 Toluene-d8 (S) 104 %. 79-119 1 12/29/16 17:08 2037-26-5 Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 15:50 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04		00	0.4	70.400			40/00/40 47 00	4000 50 7	
Toluene-d8 (S) 104 %. 79-119 1 12/29/16 17:08 2037-26-5 Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 15:50 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04	` ,			_					
Sample: DUP003 Lab ID: 2047967016 Collected: 12/28/16 00:00 Received: 12/28/16 15:50 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 629-99-2 Surrogates n-Pentacosane (S) 41 % 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 % 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04	` ,								
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04	Toluene-d8 (S)	104	%.	79-119	1		12/29/16 17:08	3 2037-26-5	
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04	Sample: DUP003	Lab ID: 204	7967016	Collected: 12/28/1	16 00:00	Received: 12	2/28/16 15:50	Matrix: Water	
Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04	Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04	8015M DRO/ORO Organics	- Analytical Meth	nod: EPA 80	D15B Modified Prepa	ration M	lethod: EPA 353	 5		
Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/30/16 10:38 01/11/17 18:23 Surrogates n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04	Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 18:23	3	
n-Pentacosane (S) 41 %. 16-137 1 12/30/16 10:38 01/11/17 18:23 629-99-2 o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04	Oil Range Organics (>C28-C40)		_						
o-Terphenyl (S) 54 %. 10-121 1 12/30/16 10:38 01/11/17 18:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04		44	0/	46 407	4	10/20/16 10:20	04/44/47 40:00	620.00.0	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04									
Gasoline Range Organics ND ug/L 50.0 1 01/05/17 01:04	o-Terpnenyi (5)	54	%.	10-121	1	12/30/16 10:38	01/11/17 18:23	0 64-15-1	
	8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Surrogates		ND	ug/L	50.0	1		01/05/17 01:04	1	
4-Bromofluorobenzene (S) 88 %. 44-148 1 01/05/17 01:04 460-00-4		88	%	44-148	1		01/05/17 01:04	1 460-00-4	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: DUP003	Lab ID: 2047	7967016	Collected: 12/28/1	6 00:00	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	0.0066	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:3	1 7440-38-2	
Chromium	0.024	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:3	1 7440-47-3	
_ead	0.011	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:3	1 7439-92-1	
/anadium	0.082	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:3	1 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3005A			
Arsenic, Dissolved	1.0	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:17	7 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:17	7 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:17	7 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1		01/06/17 15:17		
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Meth	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:56	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	470 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:4	1 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	83-32-9	
cenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	208-96-8	
Inthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40) 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/09/17 18:40		
Chrysene	ND	ug/L	0.10	1		01/09/17 18:40		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/09/17 18:40		
luoranthene	ND	ug/L	0.10	1		01/09/17 18:40		
luorene	ND	ug/L	0.10	1		01/09/17 18:40		
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/09/17 18:40		
P-Methylnaphthalene	ND	ug/L	0.10	1		01/09/17 18:40		
Naphthalene	ND	ug/L	0.10	1		01/09/17 18:40		
Phenanthrene	ND	ug/L	0.10	1		01/09/17 18:40		
		· .		1				
Pyrene Surrogates	ND	ug/L	0.10		12/31/10 11.49	01/09/17 18:40	129-00-0	
2-Fluorobiphenyl (S)	74	%.	25-150	1	12/31/16 11:49	01/09/17 18:40	321-60-8	
erphenyl-d14 (S)	69	%.	25-150	1		01/09/17 18:40		
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	6.5	ug/L	4.0	1		12/29/16 17:26	6 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 17:26		-
Bromodichloromethane	ND ND	ug/L ug/L	0.50	1		12/29/16 17:26	-	
Bromoform		_				12/29/16 17:26		
	ND	ug/L	0.50	1				1.0
Bromomethane	ND ND	ug/L ug/L	0.50 2.0	1 1		12/29/16 17:26 12/29/16 17:26		L3



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: DUP003	Lab ID: 204	7967016	Collected: 12/28/1	6 00:00	Received:	12/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 17:26	5 75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 17:26	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 17:26	6 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 17:26	5 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 17:26	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 17:26	6 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 17:26	6 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 17:26	3 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 17:26	6 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 17:26	5 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:26		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:26		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:26	5 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 17:26	5 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:26		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 17:26		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:26	6 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:26		
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 17:26		
2-Hexanone	ND	ug/L	1.0	1		12/29/16 17:26		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 17:26		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 17:26		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 17:26		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 17:26		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 17:26		
Styrene	ND	ug/L	1.0	1		12/29/16 17:26		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 17:26		
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 17:26		
Foluene	ND	ug/L	0.50	1		12/29/16 17:26		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 17:26		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 17:26		
Frichloroethene	ND	ug/L	0.50	1		12/29/16 17:26		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 17:26		
/inyl chloride	ND	ug/L	0.50	1		12/29/16 17:26		
m&p-Xylene	ND	ug/L	2.0	1			5 179601-23-1	
o-Xylene	ND ND	ug/L	1.0	1		12/29/16 17:26		
Surrogates	ND	ug/L	1.0	ı		12/23/10 17.20	5 55-41-0	
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 17:26	1868-53-7	
4-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 17:26		
Toluene-d8 (S)	105	%.	79-119	1		12/29/16 17:26		



Project: PUMA TERMINAL MW SAMPLING

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Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Analytical Meth	od: EPA 80	15B Modified Prepa	ration M	ethod: EPA 3535	5		
ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 18:51	I	
ND	mg/L	1.0	1	12/30/16 10:38	01/11/17 18:51	1	
50	0.4	40.407		10/00/10 10 00	04/44/47 40 54		
56	%.	10-121	1	12/30/16 10:38	01/11/17 18:51	84-15-1	
Analytical Meth	od: EPA 80	15/8021					
ND	ug/L	50.0	1		01/05/17 01:3	1	
91	%.	44-148	1		01/05/17 01:3	1 460-00-4	
Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EPA	3010			
					01/06/17 13:34	5 7440-38-2	
	•						
	-						
	-						
					01/00/17 13.30	7440-02-2	
Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EPA	3005A			
ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:2	1 7440-38-2	
ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:21	1 7440-47-3	
ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:2	1 7439-92-1	
ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:21	1 7440-62-2	
Analytical Meth	od: EPA 74	70 Preparation Meth	nod: EPA	7470			
ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:58	3 7439-97-6	
Analytical Meth	od: EPA 74	70 Preparation Meth	nod: EPA	7470			
ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:43	3 7439-97-6	
Analytical Meth	od: EPA 82	70 by SIM Preparati	on Meth	od: EPA 3510			
ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	83-32-9	
ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	208-96-8	
ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	120-12-7	
ND	•	0.10	1	12/31/16 11:49	01/09/17 19:00	56-55-3	
ND	-	0.10	1	12/31/16 11:49	01/09/17 19:00	50-32-8	
	_						
	-						
	•						
	_						
ND	ug/L	0.10	1 1		01/09/17 19:00 01/09/17 19:00		
	Analytical Methon ND ND S6 S6 S6 Analytical Methon ND ND ND ND ND ND ND ND ND ND ND ND Analytical Methon ND Analytical Methon ND Analytical Methon ND Analytical Methon ND Analytical Methon ND ND ND ND ND ND ND ND ND ND ND ND ND	Analytical Method: EPA 80 ND mg/L 56 %. 56 %. Analytical Method: EPA 80 ND ug/L 91 %. Analytical Method: EPA 60 ND mg/L ND mg/L ND mg/L ND mg/L Analytical Method: EPA 60 ND ug/L ND ug/L ND ug/L ND ug/L Analytical Method: EPA 74 ND ug/L Analytical Method: EPA 74 ND ug/L Analytical Method: EPA 74 ND ug/L Analytical Method: EPA 74 ND ug/L Analytical Method: EPA 82 ND ug/L Analytical Method: EPA 82 ND ug/L Analytical Method: EPA 94 ND ug/L Analytical Method: EPA 94 ND ug/L Analytical Method: EPA 94 ND ug/L	ND	Analytical Method: EPA 8015B Modified Preparation M ND mg/L 0.50 1 ND mg/L 1.0 1 56 %. 16-137 1 56 %. 10-121 1 Analytical Method: EPA 8015/8021 ND ug/L 50.0 1 91 %. 44-148 1 Analytical Method: EPA 6020 Preparation Method: EPA ND mg/L 0.0010 1 ND mg/L 0.0010 1 ND mg/L 0.0010 1 ND mg/L 0.0050 1 Analytical Method: EPA 6020 Preparation Method: EPA ND mg/L 0.0050 1 Analytical Method: EPA 6020 Preparation Method: EPA ND ug/L 1.0 1 ND ug/L 1.0 1 ND ug/L 1.0 1 ND ug/L 5.0 1 Analytical Method: EPA 7470 Preparation Method: EPA ND ug/L 0.20 1 Analytical Method: EPA 7470 Preparation Method: EPA ND ug/L 0.20 1 Analytical Method: EPA 8270 by SIM Preparation Method: EPA ND ug/L 0.10 1	Analytical Method: EPA 8015B Modified Preparation Method: EPA 3533 ND mg/L 0.50 1 12/30/16 10:38 56 %. 16-137 1 12/30/16 10:38 56 %. 10-121 1 12/30/16 10:38 Analytical Method: EPA 8015/8021 ND ug/L 50.0 1 91 %. 44-148 1 Analytical Method: EPA 6020 Preparation Method: EPA 3010 ND mg/L 0.0010 1 12/30/16 16:10 ND mg/L 0.0010 1 12/30/16 16:10 ND mg/L 0.0010 1 12/30/16 16:10 ND mg/L 0.0050 1 12/30/16 16:10 ND mg/L 0.0050 1 12/30/16 16:10 Analytical Method: EPA 6020 Preparation Method: EPA 3005A ND ug/L 1.0 1 12/30/16 18:15 ND ug/L 1.0 1 12/30/16 18:15 ND ug/L 1.0 1 12/30/16 18:15 ND ug/L 1.0 1 12/30/16 18:15 ND ug/L 1.0 1 12/30/16 18:15 Analytical Method: EPA 7470 Preparation Method: EPA 7470 ND ug/L 0.20 1 12/30/16 17:49 Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 ND ug/L 0.10 1 12/31/16 11:49	Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 ND mg/L 0.50 1 12/30/16 10:38 01/11/17 18:51 56 %. 16-137 1 12/30/16 10:38 01/11/17 18:51 56 %. 10-121 1 12/30/16 10:38 01/11/17 18:51 56 %. 10-121 1 12/30/16 10:38 01/11/17 18:51 Analytical Method: EPA 8015/8021 ND ug/L 50.0 1 01/05/17 01:31 91 %. 44-148 1 01/05/17 01:31 Analytical Method: EPA 6020 Preparation Method: EPA 3010 ND mg/L 0.0010 1 12/30/16 16:10 01/06/17 13:31 ND mg/L 0.0010 1 12/30/16 16:10 01/06/17 13:31 ND mg/L 0.0010 1 12/30/16 16:10 01/06/17 13:33 ND mg/L 0.0010 1 12/30/16 16:10 01/06/17 13:33 ND mg/L 0.0050 1 12/30/16 16:10 01/06/17 13:33 Analytical Method: EPA 6020 Preparation Method: EPA 3005A Analytical Method: EPA 6020 Preparation Method: EPA 3005A ND ug/L 1.0 1 12/30/16 18:15 01/06/17 15:21 ND ug/L 1.0 1 12/30/16 18:15 01/06/17 15:22 ND ug/L 1.0 1 12/30/16 18:15 01/06/17 15:22 Analytical Method: EPA 7470 Preparation Method: EPA 7470 ND ug/L 0.20 1 12/30/16 18:15 01/06/17 15:22 Analytical Method: EPA 7470 Preparation Method: EPA 7470 ND ug/L 0.20 1 12/30/16 17:49 01/03/17 12:43 Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00 ND ug/L 0.10 1 12/31/16 11:49 01/09/17 19:00	Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 ND mg/L



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Sample: WWTP-2	Lab ID: 2047	7967017	Collected: 12/28/1	6 13:33	Received: 12	2/28/16 15:50 I	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510				
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	129-00-0		
Surrogates									
2-Fluorobiphenyl (S)	84	%.	25-150	1		01/09/17 19:00			
Terphenyl-d14 (S)	78	%.	25-150	1	12/31/16 11:49	01/09/17 19:00	1718-51-0		
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260						
Acetone	18.0	ug/L	4.0	1		12/29/16 17:44	67-64-1	C9	
Benzene	ND	ug/L	0.50	1		12/29/16 17:44	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 17:44	75-27-4		
Bromoform	ND	ug/L	0.50	1		12/29/16 17:44	75-25-2		
Bromomethane	ND	ug/L	0.50	1		12/29/16 17:44	74-83-9	L3	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 17:44			
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 17:44	75-15-0		
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 17:44			
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 17:44			
Chloroethane	ND	ug/L	0.50	1		12/29/16 17:44			
Chloroform	ND	ug/L	0.50	1		12/29/16 17:44			
Chloromethane	ND	ug/L	0.50	1		12/29/16 17:44			
1,2-Dibromo-3-chloropropane	ND ND		0.20	1		12/29/16 17:44			
Dibromochloromethane		ug/L		1		12/29/16 17:44			
	ND	ug/L	0.50				_		
I,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 17:44			
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 17:44			
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:44			
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:44			
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:44			
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 17:44	156-59-2		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:44	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 17:44	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:44	10061-01-5		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:44	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 17:44	100-41-4		
2-Hexanone	ND	ug/L	1.0	1		12/29/16 17:44	591-78-6		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 17:44	98-82-8		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 17:44			
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 17:44			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 17:44			
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 17:44			
Styrene	ND	ug/L	1.0	1		12/29/16 17:44			
1,1,2,2-Tetrachloroethane	ND ND		0.50	1		12/29/16 17:44			
Tetrachloroethene	ND ND	ug/L	0.50	1		12/29/16 17:44			
		ug/L							
Toluene	ND	ug/L	0.50	1		12/29/16 17:44			
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 17:44			
I,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 17:44			
Frichloroethene	ND	ug/L	0.50	1		12/29/16 17:44			
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 17:44			
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 17:44			
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 17:44	179601-23-1		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: WWTP-2	Lab ID: 204	17967017	Collected: 12/28/1	16 13:33	Received: 1	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Me	hod: EPA 5	030B/8260					
o-Xylene	ND	ug/L	1.0	1		12/29/16 17:4	4 95-47-6	
Surrogates Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 17:4	4 1868-53-7	
4-Bromofluorobenzene (S)	92	%.	68-124	1		12/29/16 17:4		
Foluene-d8 (S)	105	%.	79-119	1		12/29/16 17:4		
Sample: EB-101	Lab ID: 204	17967018	Collected: 12/28/1	16 14:16	Received: 1	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Me	hod: EPA 8	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	3 01/11/17 19:19	9	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		3 01/11/17 19:19		
n-Pentacosane (S)	37	%.	16-137	1	12/30/16 10:38	3 01/11/17 19:19	9 629-99-2	
p-Terphenyl (S)	37	%.	10-121	1	12/30/16 10:38	3 01/11/17 19:19	9 84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical Me	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/05/17 01:5	7	
4-Bromofluorobenzene (S)	91	%.	44-148	1		01/05/17 01:5	7 460-00-4	
6020 MET ICPMS	Analytical Me	hod: EPA 6	020 Preparation Met	hod: EPA	3010			
Arsenic	0.0013	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:3	9 7440-38-2	
Chromium	0.0053	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:3	9 7440-47-3	
∟ead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:3	9 7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:3	9 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Me	hod: EPA 6	020 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:2	5 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:2	5 7440-47-3	
∟ead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:2	5 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:2	5 7440-62-2	
470 Mercury	Analytical Me	hod: EPA 7	470 Preparation Met	hod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:0	0 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Me	hod: EPA 7	470 Preparation Met	hod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:4	6 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Me	hod: EPA 8	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	1.4	ug/L	0.10	1		01/09/17 19:20		
Acenaphthylene	0.24	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:2	0 208-96-8	
Anthracene	0.13	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:2	0 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:2	0 56-55-3	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: EB-101	Lab ID: 2	047967018	Collected: 12/28/16 14:16		Received: 12	2/28/16 15:50 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical M	ethod: EPA 8	270 by SIM Preparat	ion Meth	od: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	91-57-6	
Naphthalene	0.70	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	91-20-3	
Phenanthrene	0.43	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	85-01-8	
Pyrene	ND	ug/L	0.10	1		01/09/17 19:20		
Surrogates		- 3						
2-Fluorobiphenyl (S)	87	%.	25-150	1	12/31/16 11:49	01/09/17 19:20	321-60-8	
Terphenyl-d14 (S)	82	%.	25-150	1	12/31/16 11:49	01/09/17 19:20	1718-51-0	
3260 MSV Low Level	Analytical M	ethod: EPA 5	030B/8260					
Acetone	25.2	ug/L	4.0	1		12/29/16 18:02	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 18:02		
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 18:02		
Bromoform	ND	ug/L	0.50	1		12/29/16 18:02		
Bromomethane	ND	ug/L	0.50	1		12/29/16 18:02		L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 18:02		
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 18:02		
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 18:02		
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 18:02		
Chloroethane	ND	ug/L	0.50	1		12/29/16 18:02		
Chloroform	ND	ug/L	0.50	1		12/29/16 18:02		
Chloromethane	ND	ug/L	0.50	1		12/29/16 18:02		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 18:02		
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 18:02		
1,2-Dibromoethane (EDB)	ND	ug/L ug/L	1.0	1		12/29/16 18:02		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 18:02		
I,1-Dichloroethane	ND ND	ug/L ug/L	0.50	1		12/29/16 18:02		
1,2-Dichloroethane	ND ND	ug/L ug/L	0.50	1		12/29/16 18:02		
1,1-Dichloroethene	ND ND	ug/L ug/L	0.50	1		12/29/16 18:02		
cis-1,2-Dichloroethene	ND ND	_		1		12/29/16 18:02		
•		ug/L	1.0					
rans-1,2-Dichloroethene	ND ND	ug/L	0.50 0.50	1 1		12/29/16 18:02		
1,2-Dichloropropane		ug/L				12/29/16 18:02		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 18:02		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 18:02		
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 18:02		
2-Hexanone	ND	ug/L	1.0	1		12/29/16 18:02		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 18:02		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 18:02		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 18:02	75-09-2	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: EB-101	Lab ID: 204	7967018	Collected: 12/28/1	16 14:16	Received: 12	2/28/16 15:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 18:02	2 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 18:02	2 1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 18:02	2 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 18:02	2 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 18:02	2 127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 18:02	2 108-88-3	
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 18:02	2 71-55-6	
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 18:02	2 79-00-5	
Frichloroethene	ND	ug/L	0.50	1		12/29/16 18:02		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 18:02		
/inyl chloride	ND	ug/L	0.50	1		12/29/16 18:02		
m&p-Xylene	ND	ug/L	2.0	1			2 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 18:0		
Surrogates	ND	ug/L	1.0	'		12/23/10 10.02	2 33 47 0	
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 18:02	2 1868-53-7	
l-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 18:02		
oluene-d8 (S)	105	%.	79-119	1		12/29/16 18:02		
	100	70.	70 110	•		12/20/10 10:01	2007 200	
Sample: EB-102	Lab ID: 204	7967019	Collected: 12/28/1	16 14:59	Received: 12	2/28/16 15:50	Matrix: Water	
Sample: EB-102 Parameters	Lab ID: 204	7967019 Units	Collected: 12/28/1	16 14:59 DF	Received: 12	2/28/16 15:50 Analyzed	Matrix: Water CAS No.	Qua
Parameters	Results	Units		DF	Prepared	Analyzed		Qua
Parameters 8015M DRO/ORO Organics	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40)	Results Analytical Meth	Units	Report Limit 015B Modified Prepa	DF tration M	Prepared ethod: EPA 3535	Analyzed 5 01/11/17 19:47	CAS No.	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates	Results Analytical Meth	Units nod: EPA 80 mg/L	Report Limit 015B Modified Prepa 0.50	DF tration M	Prepared ethod: EPA 3535 12/30/16 10:38	Analyzed 01/11/17 19:47	CAS No.	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Currogates -Pentacosane (S)	Analytical Meth ND ND	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF tration M 1 1	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38	Analyzed 01/11/17 19:4: 01/11/17 19:4:	CAS No.	Qui
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S)	Analytical Meth ND ND 62	Units mod: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121	DF tration M 1 1	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38	Analyzed 01/11/17 19:4: 01/11/17 19:4:	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	Results Analytical Methods ND ND 62 65	Units mod: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121	DF tration M 1 1	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38	Analyzed 01/11/17 19:4: 01/11/17 19:4:	CAS No. 7 7 629-99-2 7 84-15-1	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 1021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates	Analytical Meth ND ND 62 65 Analytical Meth	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121	DF Iration M 1 1 1	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38	Analyzed 01/11/17 19:47 01/11/17 19:47 01/11/17 19:47	CAS No. 7 7 629-99-2 7 84-15-1	Qui
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates -Bromofluorobenzene (S)	Analytical Meth ND ND 62 65 Analytical Meth ND	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0	DF Iration M 1 1 1 1 1	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/11/17 19:47 01/11/17 19:47 01/11/17 19:47 01/05/17 02:23	CAS No. 7 7 629-99-2 7 84-15-1	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 20-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates 1-Bromofluorobenzene (S) 2020 MET ICPMS	Analytical Meth ND ND 62 65 Analytical Meth ND	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148	DF Iration M 1 1 1 1 1	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/11/17 19:47 01/11/17 19:47 01/11/17 19:47 01/05/17 02:23	CAS No. 7 7 629-99-2 7 84-15-1 3 3 460-00-4	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates 1-Bromofluorobenzene (S) 2020 MET ICPMS	Analytical Methods ND ND 62 65 Analytical Methods ND 88 Analytical Methods ND 88	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Methods	DF Irration M 1 1 1 1 1 hod: EPA	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/11/17 19:47 01/11/17 19:47 01/11/17 19:47 01/05/17 02:23 01/05/17 02:23	CAS No. 7 7 7 629-99-2 7 84-15-1 3 3 460-00-4	Qui
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates I-Pentacosane (S) I-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates I-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium	Analytical Methods ND ND 62 65 Analytical Methods ND 88 Analytical Methods ND ND	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methods 0.0010	DF Irration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/11/17 19:47 01/11/17 19:47 01/11/17 19:47 01/05/17 02:23 01/05/17 02:23 01/06/17 13:43 01/06/17 13:43	CAS No. 7 7 7 629-99-2 7 84-15-1 3 3 460-00-4 3 7440-38-2 7 7440-47-3	Qui
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Currogates -Pentacosane (S) -Terphenyl (S) 021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates -Bromofluorobenzene (S) 020 MET ICPMS Arsenic Chromium ead	Results Analytical Method ND 62 65 Analytical Method ND 88 Analytical Method ND 0.0025	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.0010 0.0010 0.0010	DF Irration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 A 3010 12/30/16 16:10 12/30/16 16:10	Analyzed 01/11/17 19:43 01/11/17 19:43 01/11/17 19:43 01/05/17 02:23 01/05/17 02:23 01/06/17 13:43 01/06/17 13:43	CAS No. 7 7 629-99-2 7 84-15-1 3 3 460-00-4 3 7440-38-2 3 7440-47-3 3 7439-92-1	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (S) Dil Casoline Range Organics Dirongates Di	Analytical Method ND ND 62 65 Analytical Method ND 88 Analytical Method ND 0.0025 ND ND ND	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Method 0.0010 0.0010 0.0010	DF 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 01/11/17 19:43 01/11/17 19:43 01/11/17 19:43 01/05/17 02:23 01/05/17 02:23 01/06/17 13:43 01/06/17 13:43	CAS No. 7 7 629-99-2 7 84-15-1 3 3 460-00-4 3 7440-38-2 3 7440-47-3 3 7439-92-1	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Dissoline Range Organics Surrogates D-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium Dead Dead Met ICPMS, Dissolved (LF)	Analytical Method ND ND 62 65 Analytical Method ND 88 Analytical Method ND 0.0025 ND ND ND	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0010 0.0050	DF 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38	Analyzed 6 01/11/17 19:4; 01/11/17 19:4; 01/11/17 19:4; 01/05/17 02:2; 01/05/17 02:2; 01/06/17 13:4; 01/06/17 13:4; 01/06/17 13:4;	CAS No. 7 7 7 629-99-2 7 84-15-1 3 3 460-00-4 3 7440-38-2 3 7440-47-3 3 7439-92-1 3 7440-62-2	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Dissoline Range Organics Surrogates D-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium Dissolved 2020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Results Analytical Method ND 62 65 Analytical Method ND 88 Analytical Method ND 0.0025 ND ND Analytical Method	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Method 0.0010 0.0010 0.0050 0.0050	DF 1 1 1 1 1 1 1 1 1 hod: EPA	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10	Analyzed 6 01/11/17 19:4; 01/11/17 19:4; 01/11/17 19:4; 01/05/17 02:2; 01/05/17 02:2; 01/06/17 13:4; 01/06/17 13:4; 01/06/17 13:4; 01/06/17 13:4;	CAS No. 7 7 7 7 629-99-2 7 84-15-1 3 3 460-00-4 3 7440-38-2 3 7440-62-2 9 7440-38-2	Qui
Parameters Parame	Results Analytical Method ND 62 65 Analytical Method ND 88 Analytical Method ND 0.0025 ND ND Analytical Method	Units mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L od: EPA 60 ug/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methors 0.0010 0.0010 0.0050 0.0050 0.00 Preparation Methors 0.20 Preparation Methors 0.	DF 1 1 1 1 1 1 1 1 1 hod: EPA 1 1 1 1	Prepared ethod: EPA 3538 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 10:38 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10 12/30/16 16:10	Analyzed 6 01/11/17 19:4; 01/11/17 19:4; 01/11/17 19:4; 01/05/17 02:2; 01/05/17 02:2; 01/06/17 13:4; 01/06/17 13:4; 01/06/17 13:4; 01/06/17 13:4; 01/06/17 15:2; 01/06/17 15:2;	CAS No. 7 7 7 629-99-2 7 84-15-1 8 3 7440-38-2 8 7440-47-3 8 7440-62-2 9 7440-38-2 9 7440-47-3	Qua



Project: PUMA TERMINAL MW SAMPLING

Date: 01/16/2017 01:05 PM

Sample: EB-102	Lab ID: 2047	Lab ID: 2047967019 Collected: 12/28/16 14:59 Received				eceived: 12/28/16 15:50 Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua		
470 Mercury	Analytical Meth	od: EPA 7	170 Preparation Met	nod: EP/	٦ 7470					
Mercury	0.34	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:02	7439-97-6			
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 7	170 Preparation Met	nod: EP/	A 7470					
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:48	7439-97-6			
3270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510					
Acenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	83-32-9			
Acenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	208-96-8			
Anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	120-12-7			
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	56-55-3			
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	50-32-8			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	205-99-2			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/09/17 19:40				
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/09/17 19:40				
Chrysene	ND	ug/L	0.10	1		01/09/17 19:40				
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/09/17 19:40				
luoranthene	ND	ug/L	0.10	1		01/09/17 19:40				
luorene	ND	ug/L	0.10	1		01/09/17 19:40				
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/09/17 19:40				
?-Methylnaphthalene	ND ND	ug/L ug/L	0.10	1		01/09/17 19:40				
laphthalene	ND ND	•	0.10	1		01/09/17 19:40				
•		ug/L								
Phenanthrene	ND	ug/L	0.10	1		01/09/17 19:40				
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	129-00-0			
Surrogates	77	%.	25-150	1	12/21/16 11:40	01/09/17 19:40	221 60 9			
2-Fluorobiphenyl (S)	77	%. %.								
Ferphenyl-d14 (S)			25-150	1	12/31/16 11:49	01/09/17 19:40	1718-51-0			
3260 MSV Low Level	Analytical Meth									
Acetone	8.8	ug/L	4.0	1		12/29/16 18:38		C9		
Benzene	ND	ug/L	0.50	1		12/29/16 18:38	_			
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 18:38				
Bromoform	ND	ug/L	0.50	1		12/29/16 18:38	75-25-2			
Bromomethane	ND	ug/L	0.50	1		12/29/16 18:38	74-83-9	L3		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 18:38	78-93-3			
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 18:38	75-15-0			
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 18:38	56-23-5			
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 18:38	108-90-7			
Chloroethane	ND	ug/L	0.50	1		12/29/16 18:38	75-00-3			
Chloroform	ND	ug/L	0.50	1		12/29/16 18:38	67-66-3			
Chloromethane	ND	ug/L	0.50	1		12/29/16 18:38	74-87-3			
,2-Dibromo-3-chloropropane	0.35	ug/L	0.20	1		12/29/16 18:38				
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 18:38				
I,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 18:38	_			
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 18:38				
.1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 18:38				
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 18:38				



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: EB-102	Lab ID: 20	47967019	Collected: 12/28/1	6 14:59	Received: 1	2/28/16 15:50 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Me	ethod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 18:38	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 18:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 18:38	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 18:38	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 18:38	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 18:38	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 18:38	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 18:38	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 18:38	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 18:38	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 18:38		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 18:38		
Methyl-tert-butyl ether	1.8	ug/L	0.50	1		12/29/16 18:38		
Styrene	ND	ug/L	1.0	1		12/29/16 18:38		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 18:38		
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 18:38		
Toluene	ND	ug/L	0.50	1		12/29/16 18:38		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 18:38		
1,1,2-Trichloroethane	ND ND	ug/L	0.50	1		12/29/16 18:38		
Trichloroethene	ND ND	ug/L	0.50	1		12/29/16 18:38		
Trichlorofluoromethane	ND ND	ug/L ug/L	0.50	1		12/29/16 18:38		
Vinyl chloride	ND ND	ug/L ug/L	0.50	1		12/29/16 18:38		
m&p-Xylene	ND ND	ug/L	2.0	1		12/29/16 18:38		
o-Xylene	ND ND	ug/L ug/L	1.0	1		12/29/16 18:38		
Surrogates	ND	ug/L	1.0	'		12/29/10 10.30	93-47-0	
Dibromofluoromethane (S)	93	%.	72-126	1		12/29/16 18:38	1868-53-7	
4-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 18:38		
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 18:38		
Sample: FB-122816	Lab ID: 20	47067021	Collected: 12/28/1	6 15:05	Paccivad: 1	2/28/16 15:50 M	latrix: Water	
-								0
Parameters	Results -	Units	Report Limit	DF	Prepared	Analyzed ———	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Me	ethod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/05/17 02:50		
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/05/17 02:50	460-00-4	
8260 MSV Low Level	Analytical Me	thod: EPA 50	030B/8260					
Acetone	14.9	ug/L	4.0	1		12/29/16 18:56	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 18:56	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 18:56	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 18:56	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 18:56	74-83-9	L3
	ND	ug/L	2.0	1		12/29/16 18:56	78-03-3	
2-Butanone (MEK)	ND	ug/L	2.0	•		12/20/10 10:00	10 33 3	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Sample: FB-122816	Lab ID: 204	7967021	Collected: 12/28/1	6 15:05	Received: 12/28/16 15:50 Matrix: Water
Parameters	Results	Units	Report Limit	DF	Prepared Analyzed CAS No. Qu
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260		
Carbon tetrachloride	ND	ug/L	0.50	1	12/29/16 18:56 56-23-5
Chlorobenzene	ND	ug/L	0.50	1	12/29/16 18:56 108-90-7
Chloroethane	ND	ug/L	0.50	1	12/29/16 18:56 75-00-3
Chloroform	ND	ug/L	0.50	1	12/29/16 18:56 67-66-3
Chloromethane	ND	ug/L	0.50	1	12/29/16 18:56 74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/29/16 18:56 96-12-8
Dibromochloromethane	ND	ug/L	0.50	1	12/29/16 18:56 124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/29/16 18:56 106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/29/16 18:56 75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1	12/29/16 18:56 75-34-3
1,2-Dichloroethane	ND	ug/L	0.50	1	12/29/16 18:56 107-06-2
1,1-Dichloroethene	ND	ug/L	0.50	1	12/29/16 18:56 75-35-4
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/29/16 18:56 156-59-2
rans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/29/16 18:56 156-60-5
1,2-Dichloropropane	ND	ug/L	0.50	1	12/29/16 18:56 78-87-5
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/29/16 18:56 10061-01-5
rans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/29/16 18:56 10061-02-6
Ethylbenzene	ND	ug/L	0.50	1	12/29/16 18:56 100-41-4
2-Hexanone	ND	ug/L	1.0	1	12/29/16 18:56 591-78-6
sopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/29/16 18:56 98-82-8
Methyl acetate	ND	ug/L	2.0	1	12/29/16 18:56 79-20-9
Methylene Chloride	ND	ug/L	0.50	1	12/29/16 18:56 75-09-2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/29/16 18:56 108-10-1
Methyl-tert-butyl ether	ND	ug/L	0.50	1	12/29/16 18:56 1634-04-4
Styrene	ND	ug/L	1.0	1	12/29/16 18:56 100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/29/16 18:56 79-34-5
Tetrachloroethene	ND	ug/L	0.50	1	12/29/16 18:56 127-18-4
Toluene	ND	ug/L	0.50	1	12/29/16 18:56 108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/29/16 18:56 71-55-6
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/29/16 18:56 79-00-5
Frichloroethene	ND	ug/L	0.50	1	12/29/16 18:56 79-01-6
Trichlorofluoromethane	ND	ug/L	0.50	1	12/29/16 18:56 75-69-4
/inyl chloride	ND	ug/L	0.50	1	12/29/16 18:56 75-01-4
m&p-Xylene	ND	ug/L	2.0	1	12/29/16 18:56 179601-23-1
o-Xylene	ND	ug/L	1.0	1	12/29/16 18:56 95-47-6
Surrogates	.,,,	~9, -	1.0	•	,,, 10.00 00 17 0
Dibromofluoromethane (S)	91	%.	72-126	1	12/29/16 18:56 1868-53-7
I-Bromofluorobenzene (S)	93	%.	68-124	1	12/29/16 18:56 460-00-4
Toluene-d8 (S)	104	%.	79-119	1	12/29/16 18:56 2037-26-5



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

I ARODATORY CONTROL SAMPLE.

Date: 01/16/2017 01:05 PM

QC Batch: 71376 Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008,

2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016,

2047967017, 2047967018, 2047967019, 2047967021

METHOD BLANK: 298562 Matrix: Water

Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008,

2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016,

2047967017, 2047967018, 2047967019, 2047967021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND -	50.0	01/04/17 15:54	
4-Bromofluorobenzene (S)	%.	90	44-148	01/04/17 15:54	

METHOD BLANK: 298774 Matrix: Water

Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008,

2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016,

2047967017, 2047967018, 2047967019, 2047967021

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/05/17 17:16	
4-Bromofluorobenzene (S)	%.	93	44-148	01/05/17 17:16	

Parameter Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics 4-Bromofluorobenzene (S)	ug/L %.	500	464	93 89	61-136 44-148	

LABORATORY CONTROL SAMPLE:	298775					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Gasoline Range Organics	ug/L	500	446	89	61-136	
4-Bromofluorobenzene (S)	%.			88	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 298776 298777												
			MS	MSD								
	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max			
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	515	502	98	95	15-147	2	20	
4-Bromofluorobenzene (S)	%.						93	92	44-148			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Mercury

Date: 01/16/2017 01:05 PM

QC Batch: 71211 Analysis Method: EPA 7470 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, Associated Lab Samples:

2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 297862 Matrix: Water

2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, Associated Lab Samples:

2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

Reporting Parameter Units Result Limit Analyzed Qualifiers ug/L ND 0.20 01/03/17 11:19

Blank

LABORATORY CONTROL SAMPLE: 297863

LCS LCS Spike % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1 1.0 103 80-120 Mercury ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297864 297865 MS MSD 2047967002 Spike MS MSD MS MSD Spike % Rec Max RPD RPD Parameter Units Result Conc. Result % Rec % Rec Limits Conc. Result Qual Mercury ug/L ND 1 1 1.0 1.0 104 103 75-125 20

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

QC Batch: 71229 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009,

2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 297980 Matrix: Water

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009,

2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury, Dissolved ug/L ND 0.20 01/03/17 12:08

LABORATORY CONTROL SAMPLE: 297981

LCS LCS Spike % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 1.1 Mercury, Dissolved 1 106 80-120 ug/L

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

QC Batch: 71212 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009,

2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 297866 Matrix: Water

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009,

2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND ND	0.0010	01/06/17 10:19	
Chromium	mg/L	ND	0.0010	01/06/17 10:19	
Lead	mg/L	ND	0.0010	01/06/17 10:19	
Vanadium	mg/L	ND	0.0050	01/06/17 10:19	

LABORATORY CONTROL SAMPLE:	297867	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0.020	100	83-115	
Chromium	mg/L	.02	0.020	99	85-115	
Lead	mg/L	.02	0.019	96	84-115	
Vanadium	mg/L	.02	0.019	97	81-115	

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	CATE: 29786	8		297869							
			MS	MSD								
		2047967004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	ND	.02	.02	0.018	0.019	88	91	80-120	3	20	
Chromium	mg/L	0.024	.02	.02	0.042	0.044	91	100	80-120	4	20	
Lead	mg/L	ND	.02	.02	0.020	0.021	100	103	80-120	3	20	
Vanadium	mg/L	ND	.02	.02	0.020	0.021	95	100	80-120	5	20	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

QC Batch: 71231 Analysis Method: EPA 6020

QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009,

2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 297988 Matrix: Water

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009,

2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND ND	1.0	01/06/17 10:26	
Chromium, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Lead, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Vanadium, Dissolved	ug/L	ND	5.0	01/06/17 10:26	

LABORATORY CONTROL SAMPLE:	297989	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	19.8	99	80-120	
Chromium, Dissolved	ug/L	20	19.7	98	80-120	
Lead, Dissolved	ug/L	20	19.0	95	80-120	
Vanadium, Dissolved	ug/L	20	19.5	97	80-120	

MATRIX SPIKE & MATRIX S	PIKE DUPLIC	CATE: 29902	6		299027							
			MS	MSD								
		2047967002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic, Dissolved	ug/L	ND	20	20	19.2	19.1	96	95	75-125	1	20	
Chromium, Dissolved	ug/L	ND	20	20	19.2	19.2	95	96	75-125	0	20	
Lead, Dissolved	ug/L	ND	20	20	18.8	18.9	94	95	75-125	1	20	
Vanadium, Dissolved	ug/L	ND	20	20	20.6	20.8	92	93	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

QC Batch: 71181 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level

Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008,

2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016,

2047967017, 2047967018, 2047967019, 2047967021

METHOD BLANK: 297710 Matrix: Water

Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008,

Dionic

2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016,

2047967017, 2047967018, 2047967019, 2047967021

		Blank	Blank Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND ND	0.50	12/29/16 12:56	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	12/29/16 12:56	
1,1,2-Trichloroethane	ug/L	ND	0.50	12/29/16 12:56	
1,1-Dichloroethane	ug/L	ND	0.50	12/29/16 12:56	
1,1-Dichloroethene	ug/L	ND	0.50	12/29/16 12:56	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	12/29/16 12:56	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/29/16 12:56	
1,2-Dichloroethane	ug/L	ND	0.50	12/29/16 12:56	
1,2-Dichloropropane	ug/L	ND	0.50	12/29/16 12:56	
2-Butanone (MEK)	ug/L	ND	2.0	12/29/16 12:56	
2-Hexanone	ug/L	ND	1.0	12/29/16 12:56	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	12/29/16 12:56	
Acetone	ug/L	ND	4.0	12/29/16 12:56	
Benzene	ug/L	ND	0.50	12/29/16 12:56	
Bromodichloromethane	ug/L	ND	0.50	12/29/16 12:56	
Bromoform	ug/L	ND	0.50	12/29/16 12:56	
Bromomethane	ug/L	ND	0.50	12/29/16 12:56	
Carbon disulfide	ug/L	ND	1.0	12/29/16 12:56	
Carbon tetrachloride	ug/L	ND	0.50	12/29/16 12:56	
Chlorobenzene	ug/L	ND	0.50	12/29/16 12:56	
Chloroethane	ug/L	ND	0.50	12/29/16 12:56	
Chloroform	ug/L	ND	0.50	12/29/16 12:56	
Chloromethane	ug/L	ND	0.50	12/29/16 12:56	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/29/16 12:56	
cis-1,3-Dichloropropene	ug/L	ND	0.50	12/29/16 12:56	
Dibromochloromethane	ug/L	ND	0.50	12/29/16 12:56	
Dichlorodifluoromethane	ug/L	ND	1.0	12/29/16 12:56	
Ethylbenzene	ug/L	ND	0.50	12/29/16 12:56	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/29/16 12:56	
m&p-Xylene	ug/L	ND	2.0	12/29/16 12:56	
Methyl acetate	ug/L	ND	2.0	12/29/16 12:56	
Methyl-tert-butyl ether	ug/L	ND	0.50	12/29/16 12:56	
Methylene Chloride	ug/L	ND	0.50	12/29/16 12:56	
o-Xylene	ug/L	ND	1.0	12/29/16 12:56	
Styrene	ug/L	ND	1.0	12/29/16 12:56	
Tetrachloroethene	ug/L	ND	0.50	12/29/16 12:56	
Toluene	ug/L	ND	0.50	12/29/16 12:56	
trans-1,2-Dichloroethene	ug/L	ND	0.50	12/29/16 12:56	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

METHOD BLANK: 297710 Matrix: Water

Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008,

2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016,

2047967017, 2047967018, 2047967019, 2047967021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,3-Dichloropropene	ug/L	ND ND	0.50	12/29/16 12:56	
Trichloroethene	ug/L	ND	0.50	12/29/16 12:56	
Trichlorofluoromethane	ug/L	ND	0.50	12/29/16 12:56	
Vinyl chloride	ug/L	ND	0.50	12/29/16 12:56	
4-Bromofluorobenzene (S)	%.	93	68-124	12/29/16 12:56	
Dibromofluoromethane (S)	%.	91	72-126	12/29/16 12:56	
Toluene-d8 (S)	%.	103	79-119	12/29/16 12:56	

LABORATORY CONTROL SAMPLE:	297711					
Б	11.7	Spike	LCS	LCS	% Rec	0 ""
Parameter	Units	Conc. 	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	47.0	94	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	45.0	90	15-179	
1,1,2-Trichloroethane	ug/L	50	44.1	88	58-144	
1,1-Dichloroethane	ug/L	50	39.4	79	63-129	
1,1-Dichloroethene	ug/L	50	41.7	83	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	43.4	87	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	47.6	95	52-161	
1,2-Dichloroethane	ug/L	50	40.6	81	57-148	
1,2-Dichloropropane	ug/L	50	43.0	86	66-128	
2-Butanone (MEK)	ug/L	50	42.9	86	32-183	
2-Hexanone	ug/L	50	46.5	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	46.6	93	26-171	
Acetone	ug/L	50	47.3	95	22-165	
Benzene	ug/L	50	41.9	84	62-131	
Bromodichloromethane	ug/L	50	45.7	91	69-132	
Bromoform	ug/L	50	44.0	88	35-166	
Bromomethane	ug/L	50	83.6	167	34-158 I	_0
Carbon disulfide	ug/L	50	49.8	100	31-128	
Carbon tetrachloride	ug/L	50	45.1	90	54-144	
Chlorobenzene	ug/L	50	49.7	99	70-127	
Chloroethane	ug/L	50	61.7	123	17-195	
Chloroform	ug/L	50	40.1	80	73-134	
Chloromethane	ug/L	50	28.5	57	17-153	
cis-1,2-Dichloroethene	ug/L	50	42.2	84	68-129	
cis-1,3-Dichloropropene	ug/L	50	47.3	95	72-138	
Dibromochloromethane	ug/L	50	44.6	89	49-146	
Dichlorodifluoromethane	ug/L	50	44.1	88	10-179	
Ethylbenzene	ug/L	50	46.4	93	66-126	
sopropylbenzene (Cumene)	ug/L	50	45.7	91	51-138	
m&p-Xylene	ug/L	100	98.1	98	65-129	
Methyl acetate	ug/L	50	45.6	91	20-142	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

LABORATORY CONTROL SAMPLE:	297711					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	46.2	92	37-166	
lethylene Chloride	ug/L	50	43.4	87	46-168	
Xylene	ug/L	50	47.1	94	65-124	
yrene	ug/L	50	50.7	101	72-133	
trachloroethene	ug/L	50	47.0	94	46-157	
uene	ug/L	50	47.3	95	69-126	
s-1,2-Dichloroethene	ug/L	50	42.0	84	60-129	
s-1,3-Dichloropropene	ug/L	50	46.9	94	59-149	
nloroethene	ug/L	50	51.2	102	67-132	
hlorofluoromethane	ug/L	50	69.6	139	39-171	
vl chloride	ug/L	50	37.1	74	27-149	
omofluorobenzene (S)	%.			90	68-124	
omofluoromethane (S)	%.			93	72-126	
iene-d8 (S)	%.			103	79-119	

			297713								
Parameter Uni	2047967003 ts Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD (Qual
1,1-Trichloroethane ug/	L ND	50	50	51.9	50.7	104	101	54-137	2	20	
1,2,2-Tetrachloroethane ug/	L ND	50	50	48.6	47.4	97	95	15-187	2	20	
1,2-Trichloroethane ug/	L ND	50	50	47.8	45.3	96	91	59-148	5	20	
1-Dichloroethane ug/	L ND	50	50	43.5	41.7	87	83	59-133	4	20	
1-Dichloroethene ug/	L ND	50	50	46.0	42.9	92	86	44-146	7	20	
2-Dibromo-3- ug/ Iloropropane		50	50	46.0	45.3	92	91	23-166	2	20	
2-Dibromoethane (EDB) ug/	L ND	50	50	50.3	48.9	101	98	55-166	3	20	
2-Dichloroethane ug/	L ND	50	50	43.7	42.2	87	84	56-154	3	20	
2-Dichloropropane ug/	L ND	50	50	46.9	45.2	94	90	62-135	4	20	
Butanone (MEK) ug/	L ND	50	50	45.6	43.4	91	87	20-205	5	20	
Hexanone ug/	L ND	50	50	48.1	47.1	96	94	25-189	2	20	
Methyl-2-pentanone ug/ IIBK)	L ND	50	50	48.6	47.9	97	96	23-184	1	20	
cetone ug/	L 28.2	50	50	65.3	63.7	74	71	11-217	3	20	
enzene ug/	L ND	50	50	45.4	43.9	91	88	52-141	3	20	
omodichloromethane ug/	L ND	50	50	49.2	48.0	98	96	70-134	3	20	
romoform ug/	L ND	50	50	47.3	46.0	95	92	37-171	3	20	
romomethane ug/	L ND	50	50	86.6	86.9	173	174	34-155	0	20 M	0
arbon disulfide ug/	L ND	50	50	58.0	53.3	116	107	28-130	8	20	
arbon tetrachloride ug/	L ND	50	50	50.5	48.1	101	96	48-146	5	20	
nlorobenzene ug/	L ND	50	50	52.4	50.6	105	101	67-129	4	20	
nloroethane ug/	L ND	50	50	70.8	65.0	142	130	12-192	8	20	
nloroform ug/	L ND	50	50	43.5	41.9	87	84	66-143	4	20	
nloromethane ug/	L ND	50	50	33.2	32.4	66	64	14-155	3	20	
s-1,2-Dichloroethene ug/	L ND	50	50	45.6	43.5	91	87	56-141	5	20	
s-1,3-Dichloropropene ug/	L ND	50	50	50.4	48.7	101	97	70-139	3	20	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

MATRIX SPIKE & MATRIX SPIR	KE DUPLICA	ATE: 29771	_		297713							
			MS	MSD								
		2047967003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dibromochloromethane	ug/L	ND ND	50	50	47.7	46.2	95	92	50-150	3	20	
Dichlorodifluoromethane	ug/L	ND	50	50	50.7	50.3	101	101	10-173	1	20	
Ethylbenzene	ug/L	ND	50	50	48.1	46.2	96	92	57-135	4	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	49.7	48.4	99	97	40-146	3	20	
m&p-Xylene	ug/L	ND	100	100	104	99.3	104	99	56-136	4	20	
Methyl acetate	ug/L	ND	50	50	41.4	40.0	83	80	10-142	3	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	49.2	48.7	98	97	35-176	1	20	
Methylene Chloride	ug/L	ND	50	50	45.4	44.7	91	89	45-166	2	20	
o-Xylene	ug/L	ND	50	50	49.1	47.4	98	95	57-133	4	20	
Styrene	ug/L	ND	50	50	52.8	50.8	106	102	58-144	4	20	
Tetrachloroethene	ug/L	ND	50	50	48.8	46.7	98	93	48-143	4	20	
Toluene	ug/L	ND	50	50	51.5	49.5	103	99	59-136	4	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	46.9	44.6	94	89	57-132	5	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	49.6	48.3	99	97	59-154	3	20	
Trichloroethene	ug/L	ND	50	50	54.6	52.7	109	105	58-140	4	20	
Trichlorofluoromethane	ug/L	ND	50	50	80.5	79.0	161	158	24-175	2	20	
Vinyl chloride	ug/L	ND	50	50	42.7	40.6	85	81	21-150	5	20	
4-Bromofluorobenzene (S)	%.						91	91	68-124			
Dibromofluoromethane (S)	%.						94	94	72-126			
Toluene-d8 (S)	%.						103	103	79-119			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

QC Batch: 71180 Analysis Method: EPA 8015B Modified QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009,

2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 297707 Matrix: Water

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009,

2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND ND	0.25	01/09/17 13:46	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/09/17 13:46	
n-Pentacosane (S)	%.	42	16-137	01/09/17 13:46	
o-Terphenyl (S)	%.	50	10-121	01/09/17 13:46	

LABORATORY CONTROL SAMPLE:	297708					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	ND	62	10-115	
n-Pentacosane (S)	%.			61	16-137	
o-Terphenyl (S)	%.			77	10-121	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

LADODATODY CONTROL CAMPLE.

Date: 01/16/2017 01:05 PM

QC Batch: 71190 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009

METHOD BLANK: 297751 Matrix: Water

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/09/17 13:41	
Acenaphthene	ug/L	ND	0.10	01/09/17 13:41	
Acenaphthylene	ug/L	ND	0.10	01/09/17 13:41	
Anthracene	ug/L	ND	0.10	01/09/17 13:41	
Benzo(a)anthracene	ug/L	ND	0.10	01/09/17 13:41	
Benzo(a)pyrene	ug/L	ND	0.10	01/09/17 13:41	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/09/17 13:41	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/09/17 13:41	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/09/17 13:41	
Chrysene	ug/L	ND	0.10	01/09/17 13:41	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/09/17 13:41	
Fluoranthene	ug/L	ND	0.10	01/09/17 13:41	
Fluorene	ug/L	ND	0.10	01/09/17 13:41	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/09/17 13:41	
Naphthalene	ug/L	ND	0.10	01/09/17 13:41	
Phenanthrene	ug/L	ND	0.10	01/09/17 13:41	
Pyrene	ug/L	ND	0.10	01/09/17 13:41	
2-Fluorobiphenyl (S)	%.	73	25-150	01/09/17 13:41	
Terphenyl-d14 (S)	%.	75	25-150	01/09/17 13:41	

LABORATORY CONTROL SAMPLE:	297752	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L		2.7	67	35-150	
Acenaphthene	ug/L	4	2.8	70	35-150	
Acenaphthylene	ug/L	4	2.8	70	35-150	
Anthracene	ug/L	4	3.1	78	35-150	
Benzo(a)anthracene	ug/L	4	2.8	70	35-150	
Benzo(a)pyrene	ug/L	4	2.6	64	35-150	
Benzo(b)fluoranthene	ug/L	4	2.5	63	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.0	76	35-150	
Benzo(k)fluoranthene	ug/L	4	2.6	65	35-150	
Chrysene	ug/L	4	2.7	66	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.3	83	35-150	
Fluoranthene	ug/L	4	2.5	63	35-150	
Fluorene	ug/L	4	2.7	68	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.2	79	35-150	
Naphthalene	ug/L	4	2.5	64	35-150	
Phenanthrene	ug/L	4	2.8	70	35-150	
Pyrene	ug/L	4	2.5	64	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

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LABORATORY CONTROL SAMPLE: 297752

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S) Terphenyl-d14 (S)	%. %.			87 84	25-150 25-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

QC Batch: 71254 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 298033 Matrix: Water

Associated Lab Samples: 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Faianietei	OIIIIS			Allalyzeu	
2-Methylnaphthalene	ug/L	ND	0.10	01/09/17 13:02	
Acenaphthene	ug/L	ND	0.10	01/09/17 13:02	
Acenaphthylene	ug/L	ND	0.10	01/09/17 13:02	
Anthracene	ug/L	ND	0.10	01/09/17 13:02	
Benzo(a)anthracene	ug/L	ND	0.10	01/09/17 13:02	
Benzo(a)pyrene	ug/L	ND	0.10	01/09/17 13:02	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/09/17 13:02	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/09/17 13:02	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/09/17 13:02	
Chrysene	ug/L	ND	0.10	01/09/17 13:02	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/09/17 13:02	
Fluoranthene	ug/L	ND	0.10	01/09/17 13:02	
Fluorene	ug/L	ND	0.10	01/09/17 13:02	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/09/17 13:02	
Naphthalene	ug/L	ND	0.10	01/09/17 13:02	
Phenanthrene	ug/L	ND	0.10	01/09/17 13:02	
Pyrene	ug/L	ND	0.10	01/09/17 13:02	
2-Fluorobiphenyl (S)	%.	65	25-150	01/09/17 13:02	
Terphenyl-d14 (S)	%.	77	25-150	01/09/17 13:02	

LABORATORY CONTROL SAMPLE:	298034					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L		2.7	67	35-150	
Acenaphthene	ug/L	4	2.8	70	35-150	
Acenaphthylene	ug/L	4	2.8	70	35-150	
Anthracene	ug/L	4	3.4	84	35-150	
Benzo(a)anthracene	ug/L	4	3.1	77	35-150	
Benzo(a)pyrene	ug/L	4	2.8	71	35-150	
Benzo(b)fluoranthene	ug/L	4	2.8	70	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.3	81	35-150	
Benzo(k)fluoranthene	ug/L	4	2.8	71	35-150	
Chrysene	ug/L	4	2.8	70	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.5	88	35-150	
Fluoranthene	ug/L	4	2.7	69	35-150	
Fluorene	ug/L	4	2.8	70	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.4	85	35-150	
Naphthalene	ug/L	4	2.5	63	35-150	
Phenanthrene	ug/L	4	3.0	76	35-150	
Pyrene	ug/L	4	2.7	69	35-150	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

LABORATORY CONTROL SAMPLE: 298034 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers 2-Fluorobiphenyl (S) %. 25-150 81 Terphenyl-d14 (S) 87 %. 25-150

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71594

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71595

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71621

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

Date: 01/16/2017 01:05 PM

C9 Common Laboratory Contaminant.

LO Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in

associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2047967002	EB-122716	EPA 3535	71180	EPA 8015B Modified	71621
047967003	MW-18D	EPA 3535	71180	EPA 8015B Modified	71621
047967004	MW-87A	EPA 3535	71180	EPA 8015B Modified	71621
047967005	MW-91A	EPA 3535	71180	EPA 8015B Modified	71621
047967006	MW-88A	EPA 3535	71180	EPA 8015B Modified	71621
047967007	MW-99A	EPA 3535	71180	EPA 8015B Modified	71621
47967008	MW-98A	EPA 3535	71180	EPA 8015B Modified	71621
047967009	MW-30A	EPA 3535	71180	EPA 8015B Modified	71621
47967012	EB-122816	EPA 3535	71180	EPA 8015B Modified	71621
47967013	MW-16C	EPA 3535	71180	EPA 8015B Modified	71621
47967014	WWTP-1	EPA 3535	71180	EPA 8015B Modified	71621
47967015	MW-B1	EPA 3535	71180	EPA 8015B Modified	71621
47967016	DUP003	EPA 3535	71180	EPA 8015B Modified	71621
47967017	WWTP-2	EPA 3535	71180	EPA 8015B Modified	71621
47967018	EB-101	EPA 3535	71180	EPA 8015B Modified	71621
47967019	EB-102	EPA 3535	71180	EPA 8015B Modified	71621
47967001	TB-122716	EPA 8015/8021	71376		
47967002	EB-122716	EPA 8015/8021	71376		
47967003	MW-18D	EPA 8015/8021	71376		
47967004	MW-87A	EPA 8015/8021	71376		
47967005	MW-91A	EPA 8015/8021	71376		
47967006	MW-88A	EPA 8015/8021	71376		
47967007	MW-99A	EPA 8015/8021	71376		
47967008	MW-98A	EPA 8015/8021	71376		
47967009	MW-30A	EPA 8015/8021	71376		
47967010	FB-122716	EPA 8015/8021	71376		
47967011	TB122816	EPA 8015/8021	71376		
47967012	EB-122816	EPA 8015/8021	71376		
47967013	MW-16C	EPA 8015/8021	71376		
47967014	WWTP-1	EPA 8015/8021	71376		
47967015	MW-B1	EPA 8015/8021	71376		
47967016	DUP003	EPA 8015/8021	71376		
047967017	WWTP-2	EPA 8015/8021	71376		
047967018	EB-101	EPA 8015/8021	71376		
047967019	EB-102	EPA 8015/8021	71376		
047967021	FB-122816	EPA 8015/8021	71376		
147967002	EB-122716	EPA 3010	71212	EPA 6020	71238
047967003	MW-18D	EPA 3010	71212	EPA 6020	71238
47967004	MW-87A	EPA 3010	71212	EPA 6020	71238
47967005	MW-91A	EPA 3010	71212	EPA 6020	71238
47967006	MW-88A	EPA 3010	71212	EPA 6020	71238
47967007	MW-99A	EPA 3010	71212	EPA 6020	71238
47967008	MW-98A	EPA 3010	71212	EPA 6020	71238
47967009	MW-30A	EPA 3010	71212	EPA 6020	71238
47967012	EB-122816	EPA 3010	71212	EPA 6020	71238
47967013	MW-16C	EPA 3010	71212	EPA 6020	71238
47967014	WWTP-1	EPA 3010	71212	EPA 6020	71238
047967015	MW-B1	EPA 3010	71212	EPA 6020	71238



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
047967016	DUP003	EPA 3010	 71212	EPA 6020	71238
047967017	WWTP-2	EPA 3010	71212	EPA 6020	71238
047967018	EB-101	EPA 3010	71212	EPA 6020	71238
047967019	EB-102	EPA 3010	71212	EPA 6020	71238
047967002	EB-122716	EPA 3005A	71231	EPA 6020	71239
047967003	MW-18D	EPA 3005A	71231	EPA 6020	71239
047967004	MW-87A	EPA 3005A	71231	EPA 6020	71239
047967005	MW-91A	EPA 3005A	71231	EPA 6020	71239
47967006	MW-88A	EPA 3005A	71231	EPA 6020	71239
047967007	MW-99A	EPA 3005A	71231	EPA 6020	71239
47967008	MW-98A	EPA 3005A	71231	EPA 6020	71239
047967009	MW-30A	EPA 3005A	71231	EPA 6020	71239
47967012	EB-122816	EPA 3005A	71231	EPA 6020	71239
047967013	MW-16C	EPA 3005A	71231	EPA 6020	71239
047967014	WWTP-1	EPA 3005A	71231	EPA 6020	71233
047967015	MW-B1	EPA 3005A	71231	EPA 6020	71239
047967016	DUP003	EPA 3005A	71231	EPA 6020	71239
047967017	WWTP-2	EPA 3005A	71231	EPA 6020	71239
)47967018	EB-101	EPA 3005A	71231	EPA 6020	71239
)47967019	EB-102	EPA 3005A	71231	EPA 6020	71239
047967002	EB-122716	EPA 7470	71211	EPA 7470	71244
047967003	MW-18D	EPA 7470	71211	EPA 7470	71244
47967004	MW-87A	EPA 7470	71211	EPA 7470	71244
047967005	MW-91A	EPA 7470	71211	EPA 7470	71244
147967006	MW-88A	EPA 7470	71211	EPA 7470	71244
047967007	MW-99A	EPA 7470	71211	EPA 7470	71244
)47967008	MW-98A	EPA 7470	71211	EPA 7470	71244
047967009	MW-30A	EPA 7470	71211	EPA 7470	71244
047967012	EB-122816	EPA 7470	71211	EPA 7470	71244
047967013	MW-16C	EPA 7470	71211	EPA 7470	71244
)47967013)47967014	WWTP-1	EPA 7470	71211	EPA 7470 EPA 7470	71244
047967014	MW-B1	EPA 7470	71211	EPA 7470 EPA 7470	71244
)47967015)47967016	DUP003	EPA 7470 EPA 7470	71211 71211	EPA 7470 EPA 7470	71244 71244
)47967016)47967017	WWTP-2	EPA 7470	71211 71211	EPA 7470 EPA 7470	71244 71244
)47967018	EB-101	EPA 7470	71211	EPA 7470 EPA 7470	71244
)47967018)47967019	EB-101	EPA 7470	71211 71211	EPA 7470 EPA 7470	71244 71244
047967002	EB-122716	EPA 7470	71229	EPA 7470	71242
047967002	MW-18D	EPA 7470	71229	EPA 7470 EPA 7470	71242
)47967003)47967004	MW-87A	EPA 7470	71229 71229	EPA 7470 EPA 7470	71242 71242
		EPA 7470 EPA 7470		EPA 7470 EPA 7470	
147967005	MW-91A MW-98A		71229		71242
)47967006	MW-88A	EPA 7470	71229	EPA 7470	71242
)47967007)47067008	MW-99A	EPA 7470	71229	EPA 7470	71242
047967008	MW-98A	EPA 7470	71229	EPA 7470	71242
047967009	MW-30A	EPA 7470	71229	EPA 7470	71242
)47967012)47967013	EB-122816 MW-16C	EPA 7470 EPA 7470	71229 71229	EPA 7470 EPA 7470	71242 71242
	MW-16C	ΕΡ Δ ////1	77:7:70	EDA ////II	717/17



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Date: 01/16/2017 01:05 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2047967015	MW-B1	EPA 7470	71229	EPA 7470	71242
2047967016	DUP003	EPA 7470	71229	EPA 7470	71242
2047967017	WWTP-2	EPA 7470	71229	EPA 7470	71242
2047967018	EB-101	EPA 7470	71229	EPA 7470	71242
2047967019	EB-102	EPA 7470	71229	EPA 7470	71242
2047967002	EB-122716	EPA 3510	71190	EPA 8270 by SIM	71594
2047967003	MW-18D	EPA 3510	71190	EPA 8270 by SIM	71594
047967004	MW-87A	EPA 3510	71190	EPA 8270 by SIM	71594
2047967005	MW-91A	EPA 3510	71190	EPA 8270 by SIM	71594
047967006	MW-88A	EPA 3510	71190	EPA 8270 by SIM	71594
2047967007	MW-99A	EPA 3510	71190	EPA 8270 by SIM	71594
2047967008	MW-98A	EPA 3510	71190	EPA 8270 by SIM	71594
2047967009	MW-30A	EPA 3510	71190	EPA 8270 by SIM	71594
047967012	EB-122816	EPA 3510	71254	EPA 8270 by SIM	71595
2047967013	MW-16C	EPA 3510	71254	EPA 8270 by SIM	71595
2047967014	WWTP-1	EPA 3510	71254	EPA 8270 by SIM	71595
2047967015	MW-B1	EPA 3510	71254	EPA 8270 by SIM	71595
047967016	DUP003	EPA 3510	71254	EPA 8270 by SIM	71595
047967017	WWTP-2	EPA 3510	71254	EPA 8270 by SIM	71595
047967018	EB-101	EPA 3510	71254	EPA 8270 by SIM	71595
2047967019	EB-102	EPA 3510	71254	EPA 8270 by SIM	71595
2047967001	TB-122716	EPA 5030B/8260	71181		
2047967002	EB-122716	EPA 5030B/8260	71181		
2047967003	MW-18D	EPA 5030B/8260	71181		
2047967004	MW-87A	EPA 5030B/8260	71181		
2047967005	MW-91A	EPA 5030B/8260	71181		
2047967006	MW-88A	EPA 5030B/8260	71181		
2047967007	MW-99A	EPA 5030B/8260	71181		
2047967008	MW-98A	EPA 5030B/8260	71181		
047967009	MW-30A	EPA 5030B/8260	71181		
2047967010	FB-122716	EPA 5030B/8260	71181		
2047967011	TB122816	EPA 5030B/8260	71181		
047967012	EB-122816	EPA 5030B/8260	71181		
2047967013	MW-16C	EPA 5030B/8260	71181		
047967014	WWTP-1	EPA 5030B/8260	71181		
047967015	MW-B1	EPA 5030B/8260	71181		
047967016	DUP003	EPA 5030B/8260	71181		
2047967017	WWTP-2	EPA 5030B/8260	71181		
2047967018	EB-101	EPA 5030B/8260	71181		
2047967019	EB-102	EPA 5030B/8260	71181		
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CHAIN-OF-CUSTODY / Analy
The Chain-of-Custody is a LEGAL DOCUMENT. All re

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		nt Information:	Required P Report To:	<u> </u>	•		· · · ·			_	nvoice Int Attention:		tion:	•			-			1				l		20	751	36	ŝ
	ess:	Arways	Copy To:	F	<u>- سارخ</u>	よう (<u>alber</u>	<u>~</u>		- ,	Company	Name	e:							DEC	2111 A	TORY	AGE	NIC V	11.777.5				
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		Man con constant	ŀ								Reference: Pace Proje						•				UST	July 2000	RC	RA		1	OTHER		v 257.5
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1	Section I	D Matrix C Client Information MATRIX /		()	<u>(</u>		COLLEC	T#D				P	reserv	atives	ç	N.A.						11							
	required	Drinking Wate	er DW	codes to left)	C=COMP)			i		ξĺ		П	1		Ĭ		t	\Box	+	1		11				2.1.15.0041341	2136-23	: :	1984
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		Product Soil/Solid	P SL	(see va	(G=GRAB	01741				COLL	ις.	li			1 1	_	1,		8 5			11			3				
	•	SAMPLE ID Oil Wipe	OL WP		😃			i		ΑŢ	<u> </u>					est			S 5	New Y	2	11			rjue				
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6 of		•					P	RINT N	ame of SAMPL	ER:	Ard		(O)0	~			T =	ATE 2	· · · · · · · · · · · · · · · · · · ·				,	_	Temp in	ceive Se (Y.	Custo lled C		Selet (≺)
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	,	│ mportant Note: By signing this form you are accep	ting Pace's Ni	ET 30 -	day paym	nent terms a	nd agreeing to	ate chan	ges of 1.5% per n	nonth	for any inv	oices r	not paid v	within 30	0 days.										F-ALL	-Q-020теv	.07, 15-May	-2007	

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1 "	www.pacelabs.com																						Pa	age:		ک '	4 Z		1
Section A		Section B Required Pro	niact I	nforma	tion		i -			Sectio Invoice		ation:											-		—		513	3 7	$\overline{}$
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Requested Du	e Date/TAT:	Project Num	ber:		002.160					Pace Pr	VIIIE #.					- 17 % - 11	V 1 See 27 V 7	na See See a		10000	S. 1885.	M.)							
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Section I Required (Dient Information MATRIX / Drinking Wat Water Waste Wate Product	CODE er DW WT WW P	(see valid codes to left)	(G=GRAB C=COMP)	COMPOSITE START	OLLECT	COMPOS END/GR		COLLECTION	١		Prese				† N.J.		1	C.	W.C.	NO PA			-	(V/N)		TOTAL LANGE		48 (1 P.)
1	SOI/Solid Oil Wipe (A-Z, 0-9 / ,) e IDS MUST BE UNIQUE Other	SL OL WP AR TS OT	<u>ш</u>	SAMPLE TYPE (G=G	DATE T	ME I	DATE	TIME	SAMPLE TEMP AT CO	# OF CONTAINERS	Unpreserved	HNO ₃	HCI NaOH	Na ₂ S ₂ O ₃	Methanol	L'Analysis Test	. ام	De / CF 4015	17	્	U1550Veh F				Residual Chlorine (Y/N)	Pace	e Project	t No./	Lab I.D.
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77 of 78						s	IGNATU	IRE of SAM	IPLE	R: 🔥	M	`						TE SI		12	125	1/4	<u>_</u>			1			
	*Important Note: By signing this form you are acc	cepting Pace's N	VET 30	day pa	ـــــا yment terms and a	agreeing to	late charg	jes of 1.5% p	er moi			ices not	paid w	ithin 30	days.		, ,				,				F-ALL	-Q-020re	v.07, 15-l	May-20	107

Pace Analytical

Sample Condition Upon Rece

WO#: 2047967

PM⋅ JAR1

Due Date: 01/12/17

CLIENT: 98-ARCADISPR

, 2007 11 12 13 13 13 13 13 13 13 13 13 13 13 13 13	1000 Riverbend, Blvd., Suite F St. Rose, LA 70087		Project	CLIENT
Courier: Pace Courier Custody Seaf on Cooler/Box	,	ed X □ U	PS □ DHL	☐ USPS ☐ Customer ☐ Other Custody Seals intact: ☐ Yes ☐ No
Therometer	Fisher IR 5	of Ice:	Vet Blue None	Samples on ice: [see COC]
	Fisher IR 7		freezing to 6°C	Date and Initials of person examining contents:
Temp must be measured from T	emperature blank when present		Comments:	
Temperature Blank Present"	?	s □No □N/A	1	
Chain of Custody Present:		s □No □N/A	2	
Chain of Custody Complete:		s □no □n/A	3	
Chain of Custody Relinquish	ed:	s □No □N/A	4	
Sampler Name & Signature o		s □No □N/A	5	
Samples Arrived within Hold		s □No □N/A	6	
Sufficient Volume:	Z/Ye	s 🗆 No 🗆 N/A	7	
Correct Containers Used:		S DNO DNIA	8	
Filtered vol. Rec. for Diss. te	sts □Ye	s 🗆 No 🗇 🎞 A	9	
Sample Labels match COC:		s □No □N/A	10	
All containers received within precautionary and/or expirati		s □No □N/A	11	
All containers needing chembeen-checked-(except-VOA,	ical preservation have coliform, & O&G).	s DNO DN/A		
All containers preservation c compliance with EPA recomm	hecked found to be in mendation.	s □No □N/A		preserative added? □Yes □No ecord lot no.: HNO3 H2SO4
Headspace in VOA Vials (>6	Smm): □Ye	s, DNO DN/A		
Trip Blank Present:		s 🗆 No	15TB./22811	le 4 Marials to Dnm
Client Notification/ Resolu Person Contacted: Comments/ Resolution:	tion:			Date/Time:
<u> </u>				
				· · · · · · · · · · · · · · · · · · ·
	·			





January 12, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 22, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

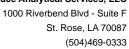
Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC):

F-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047806001	TB-122116	Water	12/21/16 00:00	12/22/16 13:15
2047806002	EB-122116	Water	12/21/16 09:17	12/22/16 13:15
2047806003	MW-83B2	Water	12/21/16 09:59	12/22/16 13:15
2047806004	MW-AD-4	Water	12/21/16 10:56	12/22/16 13:15
2047806005	MW-33A	Water	12/21/16 11:44	12/22/16 13:15
2047806006	MW-P116	Water	12/21/16 14:05	12/22/16 13:15
2047806007	MW-P117	Water	12/21/16 15:21	12/22/16 13:15
2047806008	MW-65A	Water	12/21/16 16:07	12/22/16 13:15
2047806009	FB-122116	Water	12/21/16 16:15	12/22/16 13:15
2047806010	TB-122216	Water	12/22/16 00:00	12/22/16 13:15
2047806011	EB-122216	Water	12/22/16 08:42	12/22/16 13:15
2047806012	MW-15A	Water	12/22/16 09:38	12/22/16 13:15
2047806013	MW-15B2	Water	12/22/16 10:23	12/22/16 13:15
2047806015	DUP002	Water	12/22/16 00:00	12/22/16 13:15
2047806016	MW-15B MS/MSD	Water	12/22/16 11:42	12/22/16 13:15
2047806017	FB-122216	Water	12/22/16 11:50	12/22/16 13:15



SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047806001	TB-122116	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806002	EB-122116	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806003	MW-83B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806004	MW-AD-4	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806005	MW-33A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806006	MW-P116	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806007	MW-P117	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806008	MW-65A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806009	FB-122116	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806010	TB-122216	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806011	EB-122216	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806012	MW-15A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N



SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806013	MW-15B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806015	DUP002	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806016	MW-15B MS/MSD	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806017	FB-122216	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70938

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- MSD (Lab ID: 296802)
 - Diesel Range Organic (C10-C28)

Additional Comments:



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

16 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 6020

Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

(504)469-0333



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 7470
Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

(504)469-0333



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70942

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 70982

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- MSD (Lab ID: 296926)
 - 2-Methylnaphthalene
 - Acenaphthene
 - Acenaphthylene
 - Anthracene
 - Benzo(a)anthracene
 - Benzo(a)pyrene



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 8270 by SIM

Description:8270 MSSV PAH by SIM SEPClient:BBL Caribe / Arcadis PRDate:January 12, 2017

QC Batch: 70982

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Phenanthrene
- Pyrene

Additional Comments:



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

16 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 70952

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 296850)
 - Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70952

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 296851)
 - Carbon disulfide
- MSD (Lab ID: 296852)
 - Carbon disulfide

Additional Comments:

(504)469-0333



PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method:EPA 5030B/8260Description:8260 MSV Low LevelClient:BBL Caribe / Arcadis PRDate:January 12, 2017

Analyte Comments:

QC Batch: 70952

C9: Common Laboratory Contaminant.

- DUP002 (Lab ID: 2047806015)
 - Acetone
- EB-122116 (Lab ID: 2047806002)
 - Acetone
- EB-122216 (Lab ID: 2047806011)
 - Acetone
- FB-122116 (Lab ID: 2047806009)
 - Acetone
- FB-122216 (Lab ID: 2047806017)
 - Acetone
- MW-15A (Lab ID: 2047806012)
 - Acetone
- MW-15B MS/MSD (Lab ID: 2047806016)
 - Acetone
- MW-15B2 (Lab ID: 2047806013)
 - Acetone
- MW-33A (Lab ID: 2047806005)
 - Acetone
- MW-65A (Lab ID: 2047806008)
 - Acetone
- MW-83B2 (Lab ID: 2047806003)
 - Acetone
- MW-AD-4 (Lab ID: 2047806004)
 - Acetone
- MW-P116 (Lab ID: 2047806006)
 Acetone
 - 100tono
- MW-P117 (Lab ID: 2047806007)
 - Acetone
- TB-122116 (Lab ID: 2047806001)
 - Acetone
- TB-122216 (Lab ID: 2047806010)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: TB-122116	Lab ID: 2047806001		Collected: 12/21/16 00:00		Received:	12/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 08:4	5	
4-Bromofluorobenzene (S)	95	%.	44-148	1		12/30/16 08:4	5 460-00-4	
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	56.9	ug/L	4.0	1		12/28/16 17:5		C9
Benzene	ND	ug/L	0.50	1		12/28/16 17:5	3 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 17:5	3 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 17:5	3 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 17:5	3 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 17:5	3 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 17:5	3 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 17:5	3 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 17:5		
Chloroethane	ND	ug/L	0.50	1		12/28/16 17:5		
Chloroform	ND	ug/L	0.50	1		12/28/16 17:5		
Chloromethane	1.1	ug/L	0.50	1		12/28/16 17:5		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 17:5		
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 17:5		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 17:5	-	
Dichlorodifluoromethane	ND ND		1.0	1		12/28/16 17:5		
1,1-Dichloroethane	ND ND	ug/L	0.50	1		12/28/16 17:5		
,		ug/L						
,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 17:5		
I,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 17:5		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 17:5		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 17:5		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 17:5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1			3 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1			3 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 17:5		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 17:5	3 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 17:5		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 17:5	3 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 17:5	3 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 17:5	3 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 17:5	3 1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 17:5	3 100-42-5	
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 17:5	3 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 17:5	3 127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 17:5		
I,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 17:5		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 17:5		
Frichloroethene	ND	ug/L	0.50	1		12/28/16 17:5		
Frichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 17:5		
/inyl chloride	ND	ug/L	0.50	1		12/28/16 17:5		
n&p-Xylene	ND ND		2.0	1			3	
o-Xylene	ND ND	ug/L ug/L	1.0	1		12/28/16 17:5		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: TB-122116	Lab ID: 204	7806001	Collected: 12/21/1	6 00:00	Received: 12	2/22/16 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua		
260 MSV Low Level	Analytical Method: EPA 5030B/8260									
Surrogates										
Dibromofluoromethane (S)	106	%.	72-126	1		12/28/16 17:53				
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 17:53				
Toluene-d8 (S)	100	%.	79-119	1		12/28/16 17:53	3 2037-26-5			
Sample: EB-122116	Lab ID: 204	7806002	Collected: 12/21/1	6 09:17	Received: 12	2/22/16 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua		
3015M DRO/ORO Organics	Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535									
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 20:39	9			
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		2 01/05/17 20:39				
n-Pentacosane (S)	42	%.	16-137	1	12/28/16 10:52	01/05/17 20:39	629-99-2			
p-Terphenyl (S)	47	%.	10-121	1	12/28/16 10:52	01/05/17 20:39	84-15-1			
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	015/8021							
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 09:37	7			
1-Bromofluorobenzene (S)	91	%.	44-148	1		12/30/16 09:37	7 460-00-4			
6020 MET ICPMS	Analytical Met	hod: EPA 60	020 Preparation Meth	nod: EPA	3010					
Arsenic	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7440-38-2			
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7440-47-3			
∟ead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7439-92-1			
/anadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:17	7440-62-2			
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	020 Preparation Meth	nod: EPA	3005A					
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	3 7440-38-2			
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	3 7440-47-3			
_ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	3 7439-92-1			
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:33	3 7440-62-2			
470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Meth	nod: EPA	7470					
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:57	7 7439-97-6			
470 Mercury, Dissolved (LF)	Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury, Dissolved	ND	ug/L	0.20	1		12/29/16 19:30	7439-97-6			
3270 MSSV PAH by SIM SEP	-		270 by SIM Preparati							
Acenaphthene	ND	ug/L	0.10	1		01/06/17 20:14				
Acenaphthylene	ND	ug/L	0.10	1		01/06/17 20:14				
Anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 120-12-7			
Benzo(a)anthracene	ND	ug/L	0.10	1		01/06/17 20:14				
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 50-32-8			

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: EB-122116	Lab ID: 204	7806002	Collected: 12/21/1	6 09:17	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 85-01-8	
Pyrene	ND	ug/L	0.10	1		01/06/17 20:14		
Surrogates		3						
2-Fluorobiphenyl (S)	63	%.	25-150	1	12/28/16 10:04	01/06/17 20:14	321-60-8	
Terphenyl-d14 (S)	49	%.	25-150	1	12/28/16 10:04	01/06/17 20:14	1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	29.5	ug/L	4.0	1		12/28/16 18:11	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 18:11		
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 18:11	-	
Bromoform	ND	ug/L	0.50	1		12/28/16 18:11	-	
Bromomethane	ND	ug/L	0.50	1		12/28/16 18:11		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 18:11		
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 18:11		L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 18:11		LO
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 18:11		
Chloroethane	ND	ug/L	0.50	1		12/28/16 18:11		
Chloroform	ND	ug/L	0.50	1		12/28/16 18:11		
Chloromethane	0.78	ug/L	0.50	1		12/28/16 18:11		
,2-Dibromo-3-chloropropane	ND	ug/L ug/L	0.20	1		12/28/16 18:11		
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 18:11		
1,2-Dibromoethane (EDB)	ND ND	ug/L	1.0	1		12/28/16 18:11	-	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 18:11		
,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:11		
,2-Dichloroethane	ND ND	ug/L ug/L	0.50	1		12/28/16 18:11		
,1-Dichloroethene	ND ND	ug/L	0.50	1		12/28/16 18:11		
is-1,2-Dichloroethene	ND ND	•	1.0	1		12/28/16 18:11		
,		ug/L		1				
rans-1,2-Dichloroethene	ND	ug/L	0.50			12/28/16 18:11		
,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 18:11		
sis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:11		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:11		
thylbenzene	ND	ug/L	0.50	1		12/28/16 18:11		
-Hexanone	ND	ug/L	1.0	1		12/28/16 18:11		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 18:11		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 18:11		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 18:11		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 18:11	108-10-1	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Lab ID: 204	7806002	Collected: 12/21/1	6 09:17	Received: 12	2/22/16 13:15 N	Matrix: Water	
Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Analytical Metl	nod: EPA 50	030B/8260					
ND	ug/L	0.50	1		12/28/16 18:11	1634-04-4	
ND	ug/L	1.0	1		12/28/16 18:11	100-42-5	
ND	ug/L	0.50	1		12/28/16 18:11	79-34-5	
ND	_	0.50	1		12/28/16 18:11	127-18-4	
ND		0.50	1		12/28/16 18:11	108-88-3	
ND		0.50	1		12/28/16 18:11	71-55-6	
			1				
			1				
	-						
	_						
	_						
	_						
ND	ug/L	1.0	•		.2,20,10 10.11	30 TI 0	
104	%.	72-126	1		12/28/16 18:11	1868-53-7	
		-					
	,		•		,,	200. 20 0	
Lab ID: 204	7806003	Collected: 12/21/1	6 09:59	Received: 12	2/22/16 13:15 M	Matrix: Water	
Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Analytical Metl	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5		
ND	ma/l	0.50	1	12/28/16 10:52	01/05/17 21:07		
	Ū						
ND	1119/1	1.0	•	12/20/10 10:02	01/00/11 21:01		
18	%.	16-137	1	12/28/16 10:52	01/05/17 21:07	629-99-2	
_		-	•	,,	0.7007 2	0.10.	
-			1		12/30/16 00:11		
IND	ug/L	50.0			12/30/10 03.11		
90	%.	44-148	1		12/30/16 09:11	460-00-4	
Analytical Metl	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3010			
0.0019	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:21	7440-38-2	
0.0056	mg/L	0.0010	1		01/06/17 11:21		
	mg/L	0.0010	1		01/06/17 11:21		
0.0013	IIIQ/L						
0.0013 ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:21	7440-62-2	
ND	mg/L	0.0050 020 Preparation Meth			01/06/17 11:21	7440-62-2	
ND Analytical Meth	mg/L nod: EPA 60	020 Preparation Meth	nod: EPA	\ 3005A			
ND Analytical Meth	mg/L nod: EPA 60 ug/L	020 Preparation Meth	nod: EPA	A 3005A 12/30/16 06:50	01/03/17 15:37	7440-38-2	
ND Analytical Meth 1.2 4.0	mg/L nod: EPA 60 ug/L ug/L	D20 Preparation Meth 1.0 1.0	nod: EP# 1 1	A 3005A 12/30/16 06:50 12/30/16 06:50	01/03/17 15:37 01/03/17 15:37	7440-38-2 7440-47-3	
ND Analytical Meth	mg/L nod: EPA 60 ug/L	020 Preparation Meth	nod: EPA	A 3005A 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	01/03/17 15:37	7440-38-2 7440-47-3 7439-92-1	
	Analytical Method ND ND ND ND ND ND ND ND ND ND ND ND ND	Analytical Method: EPA 50 ND ug/L 104 %. 98 %. 101 %. Lab ID: 2047806003 Results Units Analytical Method: EPA 80 ND mg/L ND mg/L 18 %. 18 %. Analytical Method: EPA 80 ND ug/L 90 %. Analytical Method: EPA 60 0.0019 mg/L	Results	Results	Results Units Report Limit DF Prepared Analytical Method: EPA 5030B/8260 ND ug/L 0.50 1 ND ug/L 1.0 1 ND ug/L 0.50 1 ND ug/L 1.0 1 104 % 72-126 1 98 % 68-124 1 101 % 79-119 1 Lab ID: 2047806003 Collected: 12/21/16 09:59 Received: 12 Results Units Report Limit DF Prepared Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 ND mg/L 1.0 1 12/28/16 10:52 ND 12/28/16 10:52 Analytical Method: EPA 8015/8021 ND ug/L 50.0 <	Results	Results



Project: PUMA TERMINAL MW SAMPLING

Date: 01/12/2017 09:20 AM

Sample: MW-83B2	Lab ID: 204	7806003	Collected: 12/21/1	6 09:59	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:5	9 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	od: EPA	٦ 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:3	3 7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparation	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:3	4 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:3	4 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:3	4 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:3	4 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:04			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:04			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04			
Chrysene	ND ND	•	0.10	1	12/28/16 10:04			
-	ND ND	ug/L	0.10	1	12/28/16 10:04			
Dibenz(a,h)anthracene		ug/L						
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04			
Fluorene	ND	ug/L	0.10	1	12/28/16 10:04			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:04			
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:04			
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:04			
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:3	4 85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:3	4 129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	88	%.	25-150	1	12/28/16 10:04			
Terphenyl-d14 (S)	57	%.	25-150	1	12/28/16 10:04	01/06/17 20:3	4 1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
Acetone	20.7	ug/L	4.0	1		12/28/16 18:2	9 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 18:2	9 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 18:29	9 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 18:2	9 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 18:2	9 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 18:29	9 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 18:2	9 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 18:29		
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 18:2		
Chloroethane	ND	ug/L	0.50	1		12/28/16 18:2		
Chloroform	ND	ug/L	0.50	1		12/28/16 18:2		
Chloromethane	ND	ug/L	0.50	1		12/28/16 18:2		
1,2-Dibromo-3-chloropropane	ND ND	ug/L ug/L	0.20	1		12/28/16 18:2		
Dibromochloromethane	ND ND	ug/L ug/L	0.50	1		12/28/16 18:2		
1,2-Dibromoethane (EDB)		•		1		12/28/16 18:2		
. ,	ND ND	ug/L	1.0					
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 18:29		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:29		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:2	9 107-06-2	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-83B2	Lab ID: 204	7806003	Collected: 12/21/1	6 09:59	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	hod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:29	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 18:29	9 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:29	9 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 18:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:29	9 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:29	9 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 18:29	9 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 18:29	9 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 18:29		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 18:29		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 18:29		
4-Methyl-2-pentanone (MIBK)	ND ND	ug/L	1.0	1		12/28/16 18:29		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 18:29		
Styrene	ND ND	ug/L	1.0	1		12/28/16 18:29		
1,1,2,2-Tetrachloroethane	ND ND	ug/L ug/L	0.50	1		12/28/16 18:29		
Tetrachloroethene	ND ND	-		1		12/28/16 18:29		
Toluene		ug/L	0.50				_	
	ND	ug/L	0.50	1		12/28/16 18:29		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:29		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:29		
Trichloroethene	ND	ug/L	0.50	1		12/28/16 18:29		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 18:29		
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 18:29		
m&p-Xylene	ND	ug/L	2.0	1			9 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 18:29	9 95-47-6	
Surrogates				_				
Dibromofluoromethane (S)	105	%.	72-126	1		12/28/16 18:29		
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 18:29		
Toluene-d8 (S)	101	%.	79-119	1		12/28/16 18:29	9 2037-26-5	
Sample: MW-AD-4	Lab ID: 204	7806004	Collected: 12/21/1	6 10:56	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Metl	hod: EPA 80	O15B Modified Prepa	ration M	ethod: EPA 3535	 5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	12/28/16 10:52	01/06/17 02:45	5	
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1		01/06/17 02:45		
Surrogates	112	9/ =	0.50	•	,, .0 10.02	5.,00,11 OL.TO	-	
n-Pentacosane (S)	35	%.	16-137	1	12/28/16 10:52	01/06/17 02:45	5 629-99-2	
o-Terphenyl (S)	48	%.	10-121	1		01/06/17 02:45		
8021 GCV BTEX, MTBE, GRO	Analytical Meth			-		2		
Gasoline Range Organics	110	ug/L	50.0	1		12/30/16 11:49	9	
Surrogates		49/L	55.0	•		.2,00,10 11.40	•	
Surrogates								



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-AD-4	Lab ID: 2047	7806004	Collected: 12/21/	16 10:56	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Met	hod: EPA	3010			
Arsenic	0.0028	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:25	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:25	7440-47-3	
_ead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:25	7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:25	7440-62-2	
020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Met	hod: EPA	3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:4	1 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:4	1 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:4	1 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:4	1 7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Met	hod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:0	1 7439-97-6	
'470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	470 Preparation Met	hod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:3	7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
cenaphthene	0.13	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	83-32-9	
cenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	208-96-8	
nthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	120-12-7	
enzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	56-55-3	
enzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	50-32-8	
enzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	205-99-2	
enzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	191-24-2	
Senzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	53-70-3	
luoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	206-44-0	
luorene	0.17	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	193-39-5	
-Methylnaphthalene	0.20	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	91-57-6	
laphthalene	0.92	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	129-00-0	
Surrogates	90	%.	05 450	1	10/00/16 10:00	04/05/47 40:44	224 60 0	
?-Fluorobiphenyl (S) erphenyl-d14 (S)	80 74	%. %.	25-150 25-150	1 1	12/28/16 10:06 12/28/16 10:06			
3260 MSV Low Level	Analytical Meth						·	
cetone	41.6	ug/L	4.0	1		12/28/16 18:47	7 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 18:47		
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 18:47		
Bromoform	ND ND	ug/L ug/L	0.50	1		12/28/16 18:47		
Bromomethane	ND ND	-	0.50	1		12/28/16 18:47		
טווטוופוופוופוופוופוופוופוופוופוופוופוופ	שאו	ug/L	0.50	1		12/20/10 10:4	14-03-9	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Parameters								
	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 18:47	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 18:47	7 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 18:47	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 18:47	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 18:47	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 18:47	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 18:47	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 18:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 18:47	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 18:47	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:47		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:47	7 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 18:47	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 18:47		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:47	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:47		
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 18:47		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 18:47		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 18:47		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 18:47		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 18:47		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 18:47		
Methyl-tert-butyl ether	1.4	ug/L	0.50	1		12/28/16 18:47		
Styrene	ND	ug/L	1.0	1		12/28/16 18:47		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 18:47		
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 18:47		
Toluene	ND	ug/L	0.50	1		12/28/16 18:47		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:47		
1,1,2-Trichloroethane	1.9	ug/L ug/L	0.50	1		12/28/16 18:47		
Frichloroethene	ND	ug/L ug/L	0.50	1		12/28/16 18:47		
Trichlorofluoromethane	ND ND	ug/L ug/L	0.50	1		12/28/16 18:47		
/inyl chloride	ND ND	ug/L ug/L	0.50	1		12/28/16 18:47		
m&p-Xylene	ND ND	ug/L ug/L	2.0	1			75-01-4 7 179601-23-1	
	ND ND	•	2.0 1.0	1		12/28/16 18:47		
o-Xylene Surrogates	ND	ug/L	1.0	I		12/20/10 18:4/	90-47-0	
Dibromofluoromethane (S)	104	%.	72-126	1		12/28/16 18:47	1868-53-7	
4-Bromofluorobenzene (S)	98	%. %.	68-124	1		12/28/16 18:47		
Foluene-d8 (S)	101	%. %.	79-119	1		12/28/16 18:47		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-33A	Lab ID: 2047	7806005	Collected: 12/21/1	6 11:44	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	0.64	mg/L	0.50	1	12/28/16 10:52	01/05/17 21:3	5	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 21:3	5	
Surrogates								
n-Pentacosane (S)	42	%.	16-137	1	12/28/16 10:52	01/05/17 21:3	5 629-99-2	
o-Terphenyl (S)	60	%.	10-121	1	12/28/16 10:52	01/05/17 21:3	5 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	383	ug/L	50.0	1		12/30/16 12:14	1	
Surrogates								
I-Bromofluorobenzene (S)	106	%.	44-148	1		12/30/16 12:14	4 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	0.013	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7440-47-3	
_ead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:29	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1		01/03/17 15:4	5 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/03/17 15:4		
ead, Dissolved	ND	ug/L	1.0	1		01/03/17 15:4		
/anadium, Dissolved	ND	ug/L	5.0	1		01/03/17 15:4		
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:0	7 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth		170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:3	7 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	1.0	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	83-32-9	
cenaphthylene	0.15	ug/L	0.10	1		01/05/17 12:30		
Anthracene	ND	ug/L	0.10	1		01/05/17 12:30		
Benzo(a)anthracene	ND	ug/L	0.10	1		01/05/17 12:30		
Benzo(a)pyrene	ND	ug/L	0.10	1		01/05/17 12:30		
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/05/17 12:30		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/05/17 12:30		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/05/17 12:30		
Chrysene	ND ND	ug/L	0.10	1		01/05/17 12:30		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/05/17 12:30		
,	ND ND	ug/L	0.10	1		01/05/17 12:30		
luoranthene		ug/L ug/L	0.10	1		01/05/17 12:30		
	N 25				12/20/10 10:00	01/00/11 12.3	, 00-10 - 1	
luorene	0.25	_			12/28/16 10:06	01/05/17 12:20	103-30 5	
Fluorene ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/05/17 12:30		
Fluoranthene Fluorene ndeno(1,2,3-cd)pyrene 2-Methylnaphthalene Naphthalene		_			12/28/16 10:06	01/05/17 12:30 01/05/17 12:30 01/05/17 12:30	91-57-6	



Project: PUMA TERMINAL MW SAMPLING

Date: 01/12/2017 09:20 AM

Sample: MW-33A	Lab ID: 204	7806005	Collected: 12/21/1	6 11:44	Received: 12	2/22/16 13:15 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	63	%.	25-150	1		01/05/17 12:30		
Terphenyl-d14 (S)	60	%.	25-150	1	12/28/16 10:06	01/05/17 12:30	1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	13.4	ug/L	4.0	1		12/28/16 19:05	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 19:05	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 19:05	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 19:05	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 19:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 19:05		
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 19:05		L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 19:05		
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 19:05		
Chloroethane	ND	ug/L	0.50	1		12/28/16 19:05		
Chloroform	ND	ug/L	0.50	1		12/28/16 19:05		
Chloromethane	ND ND	ug/L	0.50	1		12/28/16 19:05		
		-				12/28/16 19:05		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1 1				
Dibromochloromethane	ND	ug/L	0.50			12/28/16 19:05		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 19:05		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 19:05		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:05		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:05		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:05		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 19:05	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 19:05	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:05	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:05	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 19:05	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 19:05	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 19:05	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 19:05		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 19:05	75-09-2	
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 19:05		
Methyl-tert-butyl ether	8.4	ug/L	0.50	1		12/28/16 19:05		
Styrene	ND	ug/L	1.0	1		12/28/16 19:05		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 19:05		
Tetrachloroethene	ND ND	ug/L ug/L	0.50	1		12/28/16 19:05		
Foluene	ND ND		0.50	1		12/28/16 19:05		
		ug/L						
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:05		
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:05		
Frichloroethene	ND	ug/L	0.50	1		12/28/16 19:05		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 19:05		
/inyl chloride	ND	ug/L	0.50	1		12/28/16 19:05		
n&p-Xylene	ND	ug/L	2.0	1		12/28/16 19:05	179601-23-1	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-33A	Lab ID: 204	47806005	Collected: 12/21/1	16 11:44	Received: 1	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Me	thod: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		12/28/16 19:0	5 95-47-6	
Dibromofluoromethane (S)	102	%.	72-126	1		12/28/16 19:0	5 1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		12/28/16 19:0		
Toluene-d8 (S)	99	%.	79-119	1		12/28/16 19:0		
Sample: MW-P116	Lab ID: 204	47806006	Collected: 12/21/1	16 14:05	Received: 1	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Me	thod: EPA 8	015B Modified Prepa	ration M	ethod: EPA 353	5	•	
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	2 01/05/17 22:03	3	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		2 01/05/17 22:03		
n-Pentacosane (S)	31	%.	16-137	1	12/28/16 10:52	01/05/17 22:03	3 629-99-2	
p-Terphenyl (S)	48	%.	10-121	1	12/28/16 10:52	2 01/05/17 22:03	3 84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical Me	thod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 12:4	1	
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/30/16 12:4	1 460-00-4	
6020 MET ICPMS	Analytical Me	thod: EPA 6	020 Preparation Met	hod: EPA	3010			
Arsenic	0.0017	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:33	3 7440-38-2	
Chromium	0.0011	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:33	3 7440-47-3	
∟ead	0.0010	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:33	3 7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:33	3 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Me	thod: EPA 6	020 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:49	9 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:49	7440-47-3	
∟ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:49	9 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:49	9 7440-62-2	
470 Mercury	Analytical Me	thod: EPA 7	470 Preparation Met	hod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:09	9 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Me	thod: EPA 7	470 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:39	9 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Me	thod: EPA 8	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1		01/05/17 12:50		
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	208-96-8	
Anthracene	ND	ug/L	0.10	1		01/05/17 12:50	-	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	56-55-3	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-P116	Lab ID: 204	7806006	Collected: 12/21/1	6 14:05	Received: 12	2/22/16 13:15 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	91-20-3	
Phenanthrene	ND	ug/L	0.10	1		01/05/17 12:50		
Pyrene	ND	ug/L	0.10	1		01/05/17 12:50		
Surrogates		. 3						
2-Fluorobiphenyl (S)	76	%.	25-150	1	12/28/16 10:06	01/05/17 12:50	321-60-8	
Terphenyl-d14 (S)	75	%.	25-150	1	12/28/16 10:06	01/05/17 12:50	1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Acetone	14.9	ug/L	4.0	1		12/28/16 19:23	8 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 19:23		•
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 19:23	-	
Bromoform	ND	ug/L	0.50	1		12/28/16 19:23		
Bromomethane	ND	ug/L	0.50	1		12/28/16 19:23		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 19:23		
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 19:23		L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 19:23		
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 19:23		
Chloroethane	ND	ug/L	0.50	1		12/28/16 19:23		
Chloroform	ND	ug/L	0.50	1		12/28/16 19:23		
Chloromethane	ND ND	ug/L ug/L	0.50	1		12/28/16 19:23		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 19:23		
Dibromochloromethane	ND ND	ug/L ug/L	0.50	1		12/28/16 19:23		
,2-Dibromoethane (EDB)	ND ND	ug/L ug/L	1.0	1		12/28/16 19:23		
Dichlorodifluoromethane	ND ND	ug/L ug/L	1.0	1		12/28/16 19:23		
,1-Dichloroethane	ND ND	ug/L ug/L	0.50	1		12/28/16 19:23		
,2-Dichloroethane	ND ND	ug/L ug/L	0.50	1		12/28/16 19:23		
,1-Dichloroethene	ND ND	-	0.50	1		12/28/16 19:23		
		ug/L		1				
cis-1,2-Dichloroethene	ND	ug/L	1.0			12/28/16 19:23		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:23		
,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 19:23		
is-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:23		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:23		
thylbenzene	ND	ug/L	0.50	1		12/28/16 19:23		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 19:23		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 19:23		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 19:23		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 19:23	3 75-09-2	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-P116	Lab ID: 204	7806006	Collected: 12/21/1	16 14:05	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 19:23	3 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 19:23	3 1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 19:23	3 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 19:23	3 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 19:23	3 127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 19:23	3 108-88-3	
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:23	3 71-55-6	
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:23	3 79-00-5	
richloroethene	ND	ug/L	0.50	1		12/28/16 19:23	3 79-01-6	
richlorofluoromethane	ND	ug/L	0.50	1		12/28/16 19:23		
/inyl chloride	ND	ug/L	0.50	1		12/28/16 19:23		
n&p-Xylene	ND	ug/L	2.0	1			3 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 19:23		
Surrogates	ND	ug/L	1.0	'		12/20/10 15.20	33 47 0	
Dibromofluoromethane (S)	105	%.	72-126	1		12/28/16 19:23	3 1868-53-7	
l-Bromofluorobenzene (S)	97	%.	68-124	1		12/28/16 19:23		
oluene-d8 (S)	102	%.	79-119	1		12/28/16 19:23		
olueno de (e)	. 52	,		·		12/20/10 1012	200. 200	
Sample: MW-P117	Lab ID: 204	7806007	Collected: 12/21/1	16 15:21	Received: 12	2/22/16 13:15	Matrix: Water	
Sample: MW-P117 Parameters	Lab ID: 204	7806007 Units	Collected: 12/21/1	16 15:21 DF	Received: 12	2/22/16 13:15 Analyzed	Matrix: Water CAS No.	Qua
Parameters	Results	Units		DF	Prepared	Analyzed		Qua
Parameters 0015M DRO/ORO Organics	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40)	Results Analytical Meth	Units	Report Limit 015B Modified Prepa	DF aration M	Prepared ethod: EPA 3535	Analyzed 01/05/17 22:32	CAS No.	Qu
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates	Results Analytical Meth	Units nod: EPA 80 mg/L	Report Limit 015B Modified Prepa 0.50	DF aration M	Prepared ethod: EPA 3535 12/28/16 10:52	Analyzed 01/05/17 22:32 01/05/17 22:32	CAS No.	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Currogates -Pentacosane (S)	Results Analytical Methods ND ND	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF aration M 1 1	Prepared ethod: EPA 3535 12/28/16 10:52 12/28/16 10:52	Analyzed 01/05/17 22:32 01/05/17 22:32	CAS No.	Qu
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S)	Results Analytical Methods ND ND 32	Units mod: EPA 80 mg/L mg/L %. %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF aration M 1 1	Prepared ethod: EPA 3535 12/28/16 10:52 12/28/16 10:52	Analyzed 01/05/17 22:32 01/05/17 22:32	CAS No.	Qui
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	Results Analytical Methods ND ND 32 39	Units mod: EPA 80 mg/L mg/L %. %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF aration M 1 1	Prepared ethod: EPA 3535 12/28/16 10:52 12/28/16 10:52	Analyzed 01/05/17 22:32 01/05/17 22:32	CAS No. 2 2 2 2 629-99-2 2 84-15-1	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 1021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates	Analytical Methods ND ND 32 39 Analytical Methods	Units mod: EPA 80 mg/L mg/L %. %. hod: EPA 80	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021	DF aration M 1 1 1	Prepared ethod: EPA 3535 12/28/16 10:52 12/28/16 10:52	Analyzed 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32	CAS No. 2 2 2 629-99-2 2 84-15-1	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates -Bromofluorobenzene (S)	Results Analytical Method ND ND 32 39 Analytical Method ND 93	Units mod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0	DF aration M 1 1 1 1 1	Prepared ethod: EPA 3538 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52	Analyzed 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 12/30/16 13:07	CAS No. 2 2 2 629-99-2 2 84-15-1	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates 1-Bromofluorobenzene (S) 2020 MET ICPMS	Results Analytical Method ND ND 32 39 Analytical Method ND 93	Units mod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148	DF aration M 1 1 1 1 1	Prepared ethod: EPA 3538 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52	Analyzed 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 12/30/16 13:07	CAS No. 2 2 2 629-99-2 2 84-15-1 7 460-00-4	Qua
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates 1-Bromofluorobenzene (S) 2020 MET ICPMS	Analytical Method ND ND 32 39 Analytical Method ND 93 Analytical Method ND ND ND ND ND ND ND ND ND ND ND ND ND	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Methods	DF aration M 1 1 1 1 1 hod: EPA	Prepared ethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52	Analyzed 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 12/30/16 13:07	CAS No. 2 2 2 629-99-2 2 84-15-1 7 460-00-4 5 7440-38-2	Qui
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates I-Pentacosane (S) I-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates I-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium	Results Analytical Method ND ND 32 39 Analytical Method ND 93 Analytical Method ND	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methods 0.0010	DF aration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52	Analyzed 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 12/30/16 13:03 12/30/16 13:03 01/06/17 11:45 01/06/17 11:45	CAS No. 2 2 2 629-99-2 2 84-15-1 7 460-00-4 6 7440-38-2 7440-47-3	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Currogates -Pentacosane (S) -Terphenyl (S) 021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates -Bromofluorobenzene (S) 020 MET ICPMS Arsenic Chromium ead	Results Analytical Method ND ND 32 39 Analytical Method ND 93 Analytical Method ND ND ND	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L	Report Limit 0.15B Modified Preparation 16-137 10-121 0.15/8021 50.0 44-148 0.0010 0.0010 0.0010	DF aration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3538 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 4 3010 12/30/16 06:50 12/30/16 06:50	Analyzed 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 12/30/16 13:03 12/30/16 13:03 01/06/17 11:45 01/06/17 11:45 01/06/17 11:45	CAS No. 2 2 2 629-99-2 2 84-15-1 7 460-00-4 6 7440-38-2 6 7440-47-3 7 7439-92-1	Qu
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (S) Description of the property	Results Analytical Method ND 32 39 Analytical Method ND 93 Analytical Method ND ND ND ND ND ND ND ND	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Preparation 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Method 0.0010 0.0010 0.0010	DF aration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	Analyzed 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 12/30/16 13:03 12/30/16 13:03 01/06/17 11:45 01/06/17 11:45 01/06/17 11:45	CAS No. 2 2 2 629-99-2 2 84-15-1 7 460-00-4 6 7440-38-2 6 7440-47-3 7 7439-92-1	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Dissoline Range Organics Surrogates D-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium Dead Dead Met ICPMS, Dissolved (LF)	Results Analytical Method ND 32 39 Analytical Method ND 93 Analytical Method ND ND ND ND ND ND ND ND	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0010 0.0050	DF aration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	Analyzed 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 12/30/16 13:07 12/30/16 13:07 01/06/17 11:45 01/06/17 11:45 01/06/17 11:45	CAS No. 2 2 2 2 629-99-2 2 84-15-1 7 7 460-00-4 6 7440-38-2 7440-47-3 6 7439-92-1 7440-62-2	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium Lead Vanadium 2020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved	Results Analytical Method ND 32 39 Analytical Method ND 93 Analytical Method ND ND ND ND ND ND ND Analytical Method ND ND ND ND ND Analytical Method ND ND ND ND ND Analytical Method ND ND ND ND Analytical Method ND ND ND Analytical Method ND ND ND Analytical Method ND ND Analytical Method ND Analytical Method ND ND Analytical Method ND Analytical Method ND ND Analytical Method ND ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND Analytical Method ND ND Analytical Method ND ND Analytical Method ND ND ND Analytical Method ND ND ND Analytical Method ND ND ND ND ND ND ND ND ND ND ND ND ND	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L nod: EPA 60	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Method 0.0010 0.0010 0.0050 0.0050	DF aration M 1 1 1 1 1 1 thod: EPA	Prepared ethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	Analyzed 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 12/30/16 13:07 12/30/16 13:07 01/06/17 11:45 01/06/17 11:45 01/06/17 11:45 01/06/17 11:45	CAS No. 2 2 2 2 2 2 2 2 2 3 460-00-4 7 460-00-4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Qu
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Dissoline Range Organics Dissoline Range Organics Dissoline Range Organics Dissoline Range Organics Dissoline Range Organics Dissoline Range Organics Dissoline Range Organics Dissolved Arsenic Dissolved Dissolved (LF) Dissolved	Results Analytical Method ND 32 39 Analytical Method ND 93 Analytical Method ND ND ND ND ND ND Analytical Method ND ND ND ND ND ND Analytical Method	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L od: EPA 60 ug/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methors 0.0010 0.0010 0.0050 0.0050 0.00 Preparation Methors 0.20 Preparation Methors	DF aration M 1 1 1 1 1 1 thod: EPA 1 thod: EPA 1	Prepared ethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	Analyzed 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 01/05/17 22:32 12/30/16 13:07 12/30/16 13:07 01/06/17 11:45 01/06/17 11:45 01/06/17 11:45 01/06/17 11:45 01/06/17 11:55 01/03/17 15:55	CAS No. 2 2 2 629-99-2 2 84-15-1 7 460-00-4 6 7440-38-2 7440-62-2 8 7440-38-2 7440-47-3	Qu



Project: PUMA TERMINAL MW SAMPLING

Date: 01/12/2017 09:20 AM

Sample: MW-P117	Lab ID: 204	7806007	Collected: 12/21/10	5 15:21	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Met	nod: EPA 7	470 Preparation Meth	od: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:11	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Meth	od: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:41	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparation	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/05/17 13:10		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/05/17 13:10		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/05/17 13:10	-	
Chrysene	ND	ug/L	0.10	1		01/05/17 13:10		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06			
Fluoranthene	ND	ug/L	0.10	1		01/05/17 13:10		
Fluorene	ND	ug/L	0.10	1		01/05/17 13:10		
ndeno(1,2,3-cd)pyrene	ND ND	-	0.10	1		01/05/17 13:10		
, , , , , , , , , , , , , , , , , , , ,	ND ND	ug/L	0.10	1		01/05/17 13:10		
2-Methylnaphthalene		ug/L						
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:06			
Phenanthrene	ND	ug/L	0.10	1		01/05/17 13:10		
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	129-00-0	
Surrogates	75	%.	25-150	1	12/20/16 10:06	01/05/17 13:10	221 60 9	
2-Fluorobiphenyl (S)	69							
Terphenyl-d14 (S)		%.	25-150	1	12/28/16 10:06	01/05/17 13:10	7 1718-51-0	
3260 MSV Low Level	Analytical Met							
Acetone	16.4	ug/L	4.0	1		12/28/16 19:41		C9
Benzene	ND	ug/L	0.50	1		12/28/16 19:41		
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 19:41	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 19:41		
Bromomethane	ND	ug/L	0.50	1		12/28/16 19:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 19:41	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 19:41	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 19:41	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 19:41	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 19:41		
Chloroform	ND	ug/L	0.50	1		12/28/16 19:41	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 19:41		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 19:41		
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 19:41		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 19:41		
	ND	ug/L	1.0	1		12/28/16 19:41		
Dichlorodifluoromethane								
Dichlorodifluoromethane 1,1-Dichloroethane	ND ND	ug/L	0.50	1		12/28/16 19:41		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-P117	Lab ID: 204	7806007	Collected: 12/21/1	6 15:21	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:4	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 19:41	I 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:4	I 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 19:4	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:4	I 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:4	1 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 19:41	I 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 19:41	I 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 19:4	l 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 19:4	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 19:4		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 19:4		
Methyl-tert-butyl ether	1.5	ug/L	0.50	1		12/28/16 19:4		
Styrene	ND	ug/L	1.0	1		12/28/16 19:4		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 19:4		
Tetrachloroethene	ND ND	ug/L ug/L	0.50	1		12/28/16 19:4		
Toluene	ND ND	ug/L ug/L	0.50	1		12/28/16 19:4		
1,1,1-Trichloroethane	ND ND	-	0.50	1		12/28/16 19:4		
• •		ug/L						
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:41		
Trichloroethene	ND	ug/L	0.50	1		12/28/16 19:4		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 19:4		
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 19:4		
m&p-Xylene	ND	ug/L	2.0	1			179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 19:4	l 95-47-6	
Surrogates	400	0.4	70.400			10/00/10 10 1	50 7	
Dibromofluoromethane (S)	103	%.	72-126	1		12/28/16 19:4		
4-Bromofluorobenzene (S)	101	%.	68-124	1		12/28/16 19:4		
Toluene-d8 (S)	99	%.	79-119	1		12/28/16 19:4	2037-26-5	
Sample: MW-65A	Lab ID: 204	7806008	Collected: 12/21/1	6 16:07	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	D15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 23:00)	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/05/17 23:00		
Surrogates				-		2.0.00		
n-Pentacosane (S)	54	%.	16-137	1	12/28/16 10:52	01/05/17 23:00	629-99-2	
o-Terphenyl (S)	55	%.	10-121	1		01/05/17 23:00		
8021 GCV BTEX, MTBE, GRO	Analytical Meth							
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 13:33	3	
		49/ □				, _ ,	,	
Surrogates		ŭ						



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-65A	Lab ID: 2047	7806008	Collected: 12/21/	16 16:07	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Met	hod: EPA	3010			
Arsenic	0.0013	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:49	7440-38-2	
Chromium	0.0012	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:49	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:49	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:49	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Met	hod: EPA	3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:57	7 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:57	7 7440-47-3	
₋ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:57	7 7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:57	7 7440-62-2	
7470 Mercury	Analytical Meth	od: EPA 74	470 Preparation Met	hod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:30	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	470 Preparation Met	hod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:24	4 7439-97-6	
270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	83-32-9	
cenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	208-96-8	
nthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	120-12-7	
enzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	50-32-8	
Senzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	53-70-3	
luoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	206-44-0	
luorene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	193-39-5	
P-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	91-57-6	
laphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06			
Surrogates		J						
2-Fluorobiphenyl (S)	84	%.	25-150	1	12/28/16 10:06	01/05/17 13:30	321-60-8	
erphenyl-d14 (S)	82	%.	25-150	1	12/28/16 10:06	01/05/17 13:30	1718-51-0	
3260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	18.0	ug/L	4.0	1		12/28/16 19:58	3 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 19:58	3 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 19:58	3 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 19:58	3 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 19:58		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 19:58		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-65A	Lab ID: 204	7806008	Collected: 12/21/1	6 16:07	Received:	12/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Metl	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 19:58	3 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 19:58	3 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 19:58	3 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 19:58	3 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 19:58	8 67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 19:58	3 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 19:58	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 19:58	3 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 19:58	3 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 19:58	3 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:58		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:58		
I,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:58	3 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 19:58		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:58		
I,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 19:58		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:58		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:58		
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 19:58		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 19:58		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 19:58		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 19:58		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 19:58		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 19:58		
Methyl-tert-butyl ether	ND ND	ug/L	0.50	1		12/28/16 19:58		
Styrene	ND ND	ug/L ug/L	1.0	1		12/28/16 19:58		
1,1,2,2-Tetrachloroethane	ND ND	ug/L ug/L	0.50	1		12/28/16 19:58		
Fetrachloroethene	ND	ug/L	0.50	1		12/28/16 19:58		
Toluene	ND ND	ug/L	0.50	1		12/28/16 19:58		
I,1,1-Trichloroethane	ND ND	ug/L ug/L	0.50	1		12/28/16 19:58		
1,1,2-Trichloroethane	ND ND	ug/L ug/L	0.50	1		12/28/16 19:58		
r, r,z-mcnioroethane Frichloroethene	ND ND	ug/∟ ug/L	0.50	1		12/28/16 19:58		
Trichloroethene Frichlorofluoromethane	ND ND	Ū	0.50	1		12/28/16 19:58		
	ND ND	ug/L	0.50 0.50	1		12/28/16 19:58		
/inyl chloride		ug/L	2.0	1				
m&p-Xylene	ND	ug/L		1			3 179601-23-1	
o-Xylene Surrogates	ND	ug/L	1.0	1		12/28/16 19:58	95-47-6	
Dibromofluoromethane (S)	106	%.	72-126	1		12/28/16 19:58	1868-53-7	
I-Bromofluorobenzene (S)	99	%. %.	68-124	1		12/28/16 19:58		
` '	99	%. %.	79-119	1				
Toluene-d8 (S)	99	%.	79-119	1		12/28/16 19:58	2037-26-5	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: FB-122116	Lab ID: 204	7806009	Collected: 12/21/1	6 16:15	Received:	12/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 13:5	9	
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/30/16 13:5	9 460-00-4	
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	19.4	ug/L	4.0	1		12/28/16 20:1	6 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 20:1	6 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 20:1	6 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 20:1	6 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 20:1	6 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 20:1	6 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 20:1	6 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 20:1	6 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 20:1	6 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 20:1	6 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 20:1		
Chloromethane	ND	ug/L	0.50	1		12/28/16 20:1		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 20:1		
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 20:1		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 20:1		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 20:1		
,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:1		
, 2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:1		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:1		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 20:1		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:1		
·	ND ND	-	0.50	1		12/28/16 20:1		
1,2-Dichloropropane		ug/L						
cis-1,3-Dichloropropene	ND	ug/L	0.50	1			6 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1			6 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 20:1		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 20:1		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 20:1		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 20:1		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 20:1		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 20:1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 20:1		
Styrene	ND	ug/L	1.0	1		12/28/16 20:1		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 20:1		
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 20:1		
Toluene	ND	ug/L	0.50	1		12/28/16 20:1		
I,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:1		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:1	6 79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 20:1	6 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 20:1	6 75-69-4	
/inyl chloride	ND	ug/L	0.50	1		12/28/16 20:1	6 75-01-4	
n&p-Xylene	ND	ug/L	2.0	1		12/28/16 20:1	6 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 20:1	6 95-47-6	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Date: 01/12/2017 09:20 AM

Pace Project No.: 2047806								
Sample: FB-122116	Lab ID: 2047	7806009	Collected: 12/21/1	16 16:15	Received:	12/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Surrogates	404	0,4	70.400	à		10/00/10 00 1	50 7	
Dibromofluoromethane (S)	104	%.	72-126	1		12/28/16 20:1		
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/28/16 20:1		
Toluene-d8 (S)	99	%.	79-119	1		12/28/16 20:1	0 2037-20-5	
Sample: TB-122216	Lab ID: 2047	7806010	Collected: 12/22/1	16 00:00	Received:	12/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 14:2	5	
4-Bromofluorobenzene (S)	91	%.	44-148	1		12/30/16 14:2	5 460-00-4	
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	62.0	ug/L	4.0	1		12/28/16 20:3	4 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 20:3	4 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 20:3	4 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 20:3	4 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 20:3	4 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 20:3	4 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 20:3	4 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 20:3	4 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 20:3	4 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 20:3	4 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 20:3	4 67-66-3	
Chloromethane	0.64	ug/L	0.50	1		12/28/16 20:3	4 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 20:3	4 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 20:3		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 20:3		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 20:3		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:3		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:3		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:3		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 20:3		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:3		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 20:3		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1			4 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1			4 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 20:3		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 20:3		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 20:3		
Methylana Chlorida	ND	ug/L	2.0	1		12/28/16 20:3		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 20:3		
4-Methyl-2-pentanone (MIBK) Methyl-tert-butyl ether	ND ND	ug/L ug/L	1.0 0.50	1 1		12/28/16 20:3 12/28/16 20:3		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

	Lab ID: 204	7806010	Collected: 12/22/1	6 00:00	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Styrene	ND	ug/L	1.0	1		12/28/16 20:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 20:34	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 20:34	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 20:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:34	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 20:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 20:34	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 20:34		
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 20:34		
o-Xylene	ND	ug/L	1.0	1		12/28/16 20:34		
Surrogates	IND	ug/L	1.0			12/20/10 20.34	33-41-0	
Dibromofluoromethane (S)	104	%.	72-126	1		12/28/16 20:34	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		12/28/16 20:34		
Toluene-d8 (S)	101	%.	79-119	1		12/28/16 20:34		
Toldene-do (5)	101	70.	73-119	'		12/20/10 20:55	2037-20-3	
Sample: EB-122216	Lab ID: 204	7806011	Collected: 12/22/1	6 08:42	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80)15B Modified Prepa	ration M	lethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 23:28	,	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/05/17 23:28		
Surrogates	ND	1119/ =	1.0	•	12/20/10 10:02	01/00/17 20:20		
n-Pentacosane (S)	42	%.	16-137	1	12/28/16 10:52	01/05/17 23:28	629-99-2	
o-Terphenyl (S)	49	%.	10-121	1		01/05/17 23:28		
o respiratory. (G)	-		-	•	12/20/10 10:02	01/00/11 20:20	01101	
3021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 14:51		
4-Bromofluorobenzene (S)	89	%.	44-148	1		12/30/16 14:51	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:53	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:53	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50			
	ND	mg/L	0.0050	1	12/30/16 06:50			
Vanadium				and: ED/	Δ 3005Δ			
	Analytical Meth	nod: EPA 60	120 Preparation Metr	iou. EF	1000071			
6020 MET ICPMS, Dissolved (LF)	•		•			01/03/17 16:09	7440-38-2	
6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:09 01/03/17 16:09		
Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved Lead, Dissolved	•		•		12/30/16 06:50 12/30/16 06:50		7440-47-3	



Project: PUMA TERMINAL MW SAMPLING

Date: 01/12/2017 09:20 AM

Sample: EB-122216	Lab ID: 204	7806011	Collected: 12/22/1	6 08-42	Received: 12	2/22/16 12:15	Matrix: Water	
·								•
Parameters	Results —	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:3	2 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:2	6 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:1	5 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:1	5 208-96-8	
Inthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:1	5 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:1	5 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52			
Benzo(k)fluoranthene	ND	ug/L ug/L	0.10	1	12/28/16 11:52			
	ND ND	-	0.10	1	12/28/16 11:52			
Chrysene		ug/L						
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52			
luoranthene	ND	ug/L	0.10	1	12/28/16 11:52			
luorene	ND	ug/L	0.10	1	12/28/16 11:52			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52			
-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:1	5 91-57-6	
laphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:1	5 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:1	5 85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:1	5 129-00-0	
Surrogates		•						
2-Fluorobiphenyl (S)	71	%.	25-150	1	12/28/16 11:52	01/06/17 15:1	5 321-60-8	
erphenyl-d14 (S)	66	%.	25-150	1	12/28/16 11:52	01/06/17 15:1	5 1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
Acetone	28.2	ug/L	4.0	1		12/28/16 20:5	2 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 20:5	2 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 20:5	2 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 20:5	2 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 20:5	2 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 20:5	2 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 20:5	2 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 20:5		
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 20:5		
Chloroethane	ND	ug/L	0.50	1		12/28/16 20:5		
Chloroform	ND	ug/L ug/L	0.50	1		12/28/16 20:5		
Chloromethane	0.65	_	0.50			12/28/16 20:5		
		ug/L		1				
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 20:5		
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 20:5		
I,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 20:5		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 20:5		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:5	2 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:5	2 107-06-2	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: EB-122216	Lab ID: 204	7806011	Collected: 12/22/1	6 08:42	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:52	2 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 20:52	2 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:52	2 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 20:52	2 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:52	2 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:52	2 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 20:52	2 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 20:52	2 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 20:52		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 20:52		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 20:52		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 20:52		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 20:52		
Styrene	ND	ug/L	1.0	1		12/28/16 20:52		
1,1,2,2-Tetrachloroethane	ND ND	ug/L	0.50	1		12/28/16 20:52		
Tetrachloroethene	ND ND	_		1		12/28/16 20:52		
Toluene		ug/L	0.50				_	
	ND	ug/L	0.50	1		12/28/16 20:52		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:52		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:52		
Trichloroethene	ND	ug/L	0.50	1		12/28/16 20:52		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 20:52		
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 20:52		
m&p-Xylene	ND	ug/L	2.0	1			2 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 20:52	2 95-47-6	
Surrogates								
Dibromofluoromethane (S)	105	%.	72-126	1		12/28/16 20:52		
4-Bromofluorobenzene (S)	95	%.	68-124	1		12/28/16 20:52		
Toluene-d8 (S)	101	%.	79-119	1		12/28/16 20:52	2 2037-26-5	
Sample: MW-15A	Lab ID: 204	7806012	Collected: 12/22/1	6 09:38	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	O15B Modified Prepa	ration M	ethod: EPA 3535	 5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 23:56	5	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/05/17 23:56		
Surrogates		· 3 ' –						
n-Pentacosane (S)	35	%.	16-137	1	12/28/16 10:52	01/05/17 23:56	6 629-99-2	
o-Terphenyl (S)	44	%.	10-121	1		01/05/17 23:56		
8021 GCV BTEX, MTBE, GRO	Analytical Meth							
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 15:17	7	
	115	~g, -	55.0	•		, 55, 10 15.11		
Surrogates								



Project: PUMA TERMINAL MW SAMPLING

Date: 01/12/2017 09:20 AM

Sample: MW-15A	Lab ID: 2047	7806012	Collected: 12/22/1	6 09:38	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	\ 3010			
Arsenic	0.0016	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:57	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:57	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:57	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:57	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:13	3 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:13	3 7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:13	3 7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1		01/03/17 16:13		
7470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:34	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:32	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1		01/06/17 15:35		
Benzo(a)pyrene	ND	ug/L	0.10	1		01/06/17 15:35		
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/06/17 15:35		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/06/17 15:35		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/06/17 15:35		
Chrysene	ND	ug/L	0.10	1		01/06/17 15:35		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/06/17 15:35		
Fluoranthene	ND	ug/L	0.10	1		01/06/17 15:35		
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/06/17 15:35		
· · · · · · · · · · · · · · · · · · ·	ND	-	0.10	1		01/06/17 15:35		
2-Methylnaphthalene	ND ND	ug/L	0.10	1		01/06/17 15:35		
Naphthalene		ug/L						
Phenanthrene	ND	ug/L	0.10	1		01/06/17 15:35		
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	129-00-0	
Surrogates	66	%.	25-150	1	10/00/16 11:50	01/06/17 15:35	221 60 0	
2-Fluorobiphenyl (S) Terphenyl-d14 (S)	66 51	%. %.	25-150 25-150	1		01/06/17 15:35		
. , , ,				•	12/20/10 11:02	01/00/17 10.50	7710-51-0	
8260 MSV Low Level	Analytical Meth					40/00/40 04 11	07.04.4	00
Acetone	12.1	ug/L	4.0	1		12/28/16 21:10		C9
Benzene	ND	ug/L	0.50	1		12/28/16 21:10		
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 21:10	_	
Bromoform	ND	ug/L	0.50	1		12/28/16 21:10		
Bromomethane	ND	ug/L	0.50	1		12/28/16 21:10		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 21:10	78-93-3	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-15A	Lab ID: 204	7806012	Collected: 12/22/1	6 09:38	Received:	12/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 21:10	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 21:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 21:10	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 21:10	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 21:10	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 21:10	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 21:10	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 21:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 21:10	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 21:10	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 21:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 21:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 21:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 21:10	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 21:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 21:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 21:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 21:10		
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 21:10	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 21:10		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 21:10	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 21:10	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 21:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 21:10		
Methyl-tert-butyl ether	6.6	ug/L	0.50	1		12/28/16 21:10	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 21:10		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 21:10	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 21:10) 127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 21:10		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:10		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:10		
Frichloroethene	ND	ug/L	0.50	1		12/28/16 21:10		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 21:10		
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 21:10		
m&p-Xylene	ND	ug/L	2.0	1) 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 21:10		
Surrogates	140	<i>49,</i> ∟	1.0	•		12,20,10 21.10		
Dibromofluoromethane (S)	106	%.	72-126	1		12/28/16 21:10	1868-53-7	
I-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 21:10		
Toluene-d8 (S)	100	%.	79-119	1		12/28/16 21:10		



Project: PUMA TERMINAL MW SAMPLING

Date: 01/12/2017 09:20 AM

Sample: MW-15B2	Lab ID: 204	7806013	Collected: 12/22/1	6 10:23	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80)15B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 00:24	1	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	12/28/16 10:52	01/06/17 00:24	1	
n-Pentacosane (S)	36	%.	16-137	1	12/28/16 10:52	01/06/17 00:24	1 629-99-2	
p-Terphenyl (S)	46	%.	10-121	1	12/28/16 10:52	01/06/17 00:24	4 84-15-1	
3021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	78.4	ug/L	50.0	1		12/30/16 15:43	3	
4-Bromofluorobenzene (S)	90	%.	44-148	1		12/30/16 15:43	3 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	0.019	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:01	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:01	7440-47-3	
_ead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:01	7439-92-1	
/anadium	ND	mg/L	0.0050	1		01/06/17 12:01		
		•				01/00/11 12:0	1110022	
6020 MET ICPMS, Dissolved (LF)	Analytical Metr	100: EPA 60	20 Preparation Meth	noa: EPA	A 3005A			
Arsenic, Dissolved	14.0	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:17	7 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:17	7 7440-47-3	
∟ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:17	7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:17	7 7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:36	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:34	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	5 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	5 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	5 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	5 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	5 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	5 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/06/17 15:55		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/06/17 15:55		
Chrysene	ND	ug/L	0.10	1		01/06/17 15:55		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/06/17 15:55		
Fluoranthene	ND	ug/L	0.10	1		01/06/17 15:55		
Fluorene	ND ND	ug/L	0.10	1		01/06/17 15:55		
ndeno(1,2,3-cd)pyrene	ND ND	ug/L ug/L	0.10	1		01/06/17 15:55		
riucrio(1,2,3-6u)pyrene								
2-Methylpaphthalena	NID	ua/l	0.40	1	10/08/16 11.50	()1/()6/17/16-64	5 Q1_57 G	
2-Methylnaphthalene Naphthalene	ND ND	ug/L ug/L	0.10 0.10	1 1	12/28/16 11:52	01/06/17 15:58 01/06/17 15:58		



Project: PUMA TERMINAL MW SAMPLING

Date: 01/12/2017 09:20 AM

Sample: MW-15B2	Lab ID: 204	7806013	Collected: 12/22/1	6 10:23	Received: 12	2/22/16 13:15 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	69	%.	25-150	1		01/06/17 15:55		
Terphenyl-d14 (S)	63	%.	25-150	1	12/28/16 11:52	01/06/17 15:55	1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	15.6	ug/L	4.0	1		12/28/16 21:28	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 21:28	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 21:28	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 21:28	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 21:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 21:28	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 21:28		L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 21:28		
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 21:28		
Chloroethane	ND	ug/L	0.50	1		12/28/16 21:28		
Chloroform	ND	ug/L	0.50	1		12/28/16 21:28		
Chloromethane	ND	ug/L	0.50	1		12/28/16 21:28		
,2-Dibromo-3-chloropropane	ND ND	ug/L	0.20	1		12/28/16 21:28		
Dibromochloromethane	ND ND	•	0.50	1		12/28/16 21:28		
		ug/L						
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 21:28		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 21:28		
,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 21:28		
,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 21:28		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 21:28		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 21:28		
rans-1,2-Dichloroethene	1.6	ug/L	0.50	1		12/28/16 21:28		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 21:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 21:28	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 21:28	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 21:28	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 21:28	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 21:28	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 21:28	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 21:28	75-09-2	
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 21:28		
Methyl-tert-butyl ether	3.6	ug/L	0.50	1		12/28/16 21:28		
Styrene	ND	ug/L	1.0	1		12/28/16 21:28		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 21:28		
etrachloroethene	ND ND	ug/L ug/L	0.50	1		12/28/16 21:28		
Foluene	ND ND		0.50	1		12/28/16 21:28		
		ug/L				12/28/16 21:28		
,1,1-Trichloroethane	ND	ug/L	0.50	1				
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:28		
Frichloroethene	ND	ug/L	0.50	1		12/28/16 21:28		
richlorofluoromethane	ND	ug/L	0.50	1		12/28/16 21:28		
/inyl chloride	ND	ug/L	0.50	1		12/28/16 21:28		
n&p-Xylene	ND	ug/L	2.0	1		12/28/16 21:28	179601-23-1	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-15B2	Lab ID: 204	7806013	Collected: 12/22/1	16 10:23	Received: 1	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		12/28/16 21:2	8 95-47-6	
Dibromofluoromethane (S)	103	%.	72-126	1		12/28/16 21:2	8 1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 21:2		
Toluene-d8 (S)	100	%.	79-119	1		12/28/16 21:2		
Sample: DUP002	Lab ID: 204	7806015	Collected: 12/22/1	16 00:00	Received: 1	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	ration M	ethod: EPA 353	5	•	
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	2 01/06/17 00:5	2	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		2 01/06/17 00:5		
n-Pentacosane (S)	41	%.	16-137	1	12/28/16 10:52	01/06/17 00:5	2 629-99-2	
p-Terphenyl (S)	44	%.	10-121	1	12/28/16 10:52	2 01/06/17 00:5	2 84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 16:1	0	
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/30/16 16:1	0 460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EPA	A 3010			
Arsenic	0.0014	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:0	5 7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:0	5 7440-47-3	
∟ead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:0	5 7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 12:0	5 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:2	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:2	7440-47-3	
∟ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:2	7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:2	7440-62-2	
470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:3	8 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:3	6 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1		01/06/17 16:1		
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:1	5 208-96-8	
Anthracene	ND	ug/L	0.10	1		01/06/17 16:1		
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:1	5 56-55-3	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: DUP002	Lab ID: 2	2047806015	Collected: 12/22/	16 00:00	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical N	Method: EPA 8	270 by SIM Prepara	tion Meth	od: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:1	5 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:1	5 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:1	5 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:19	5 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:19	5 218-01-9	
Dibenz(a,h)anthracene	ND	_	0.10	1	12/28/16 11:52	01/06/17 16:19	5 53-70-3	
Fluoranthene	ND		0.10	1	12/28/16 11:52	01/06/17 16:19	5 206-44-0	
Fluorene	ND	-	0.10	1	12/28/16 11:52	01/06/17 16:1	5 86-73-7	
ndeno(1,2,3-cd)pyrene	ND	-	0.10	1	12/28/16 11:52			
2-Methylnaphthalene	ND	ŭ	0.10	1	12/28/16 11:52			
Naphthalene	ND	_	0.10	1	12/28/16 11:52			
Phenanthrene	ND ND	_	0.10	1	12/28/16 11:52			
Pyrene	ND ND	-	0.10	1		01/06/17 16:13		
Surrogates	ND	ug/L	0.10	'	12/20/10 11.32	01/00/17 10.13	3 129-00-0	
2-Fluorobiphenyl (S)	68	%.	25-150	1	12/28/16 11:52	01/06/17 16:1	5 321-60-8	
Terphenyl-d14 (S)	56		25-150 25-150	1		01/06/17 16:13		
				Ţ	12/20/10 11.32	01/00/17 10.13	3 1710-31-0	
3260 MSV Low Level	Analytical I	Method: EPA 5	030B/8260					
Acetone	27.0		4.0	1		12/28/16 21:40		C9
Benzene	ND	ug/L	0.50	1		12/28/16 21:40	6 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 21:40	6 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 21:40	6 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 21:40	6 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 21:40	6 78-93-3	
Carbon disulfide	ND		1.0	1		12/28/16 21:40	6 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 21:40	6 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 21:40	6 108-90-7	
Chloroethane	ND	_	0.50	1		12/28/16 21:40	6 75-00-3	
Chloroform	ND	-	0.50	1		12/28/16 21:40	6 67-66-3	
Chloromethane	ND	_	0.50	1		12/28/16 21:40		
1,2-Dibromo-3-chloropropane	ND		0.20	1		12/28/16 21:40	6 96-12-8	
Dibromochloromethane	ND	J	0.50	1		12/28/16 21:40		
1,2-Dibromoethane (EDB)	ND	J	1.0	1		12/28/16 21:40		
Dichlorodifluoromethane	ND	J	1.0	1		12/28/16 21:40		
1,1-Dichloroethane	ND ND	0	0.50	1		12/28/16 21:40		
1,2-Dichloroethane	ND ND	0	0.50	1		12/28/16 21:40		
		•				12/28/16 21:40		
1,1-Dichloroethene	ND	ŭ	0.50	1				
cis-1,2-Dichloroethene	ND	•	1.0	1		12/28/16 21:40		
rans-1,2-Dichloroethene	ND	U	0.50	1		12/28/16 21:40		
1,2-Dichloropropane	ND	0	0.50	1		12/28/16 21:40		
cis-1,3-Dichloropropene	ND	J	0.50	1			6 10061-01-5	
rans-1,3-Dichloropropene	ND	ŭ	0.50	1			6 10061-02-6	
Ethylbenzene	ND	•	0.50	1		12/28/16 21:40		
2-Hexanone	ND	•	1.0	1		12/28/16 21:40		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 21:40	6 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 21:40	6 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 21:40	6 75-09-2	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: DUP002	Lab ID: 2047806015		Collected: 12/22/16 00:00		Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 21:46	3 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 21:46	6 1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 21:46	100-42-5	
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 21:46	79-34-5	
etrachloroethene	ND	ug/L	0.50	1		12/28/16 21:46	127-18-4	
oluene	ND	ug/L	0.50	1		12/28/16 21:46	108-88-3	
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:46	71-55-6	
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:46		
richloroethene	ND	ug/L	0.50	1		12/28/16 21:46		
richlorofluoromethane	ND	ug/L	0.50	1		12/28/16 21:46		
		-						
/inyl chloride	ND	ug/L	0.50	1		12/28/16 21:46		
n&p-Xylene	ND	ug/L	2.0	1			179601-23-1	
-Xylene	ND	ug/L	1.0	1		12/28/16 21:46	95-47-6	
Surrogates Dibromofluoromethane (S)	101	%.	70 106	4		10/00/16 01.40	1000 50 7	
()	104 98	%. %.	72-126	1		12/28/16 21:46		
-Bromofluorobenzene (S)			68-124	1		12/28/16 21:46		
oluene-d8 (S)	100	%.	79-119	1		12/28/16 21:46	2037-20-3	
Sample: MW-15B MS/MSD	Lab ID: 204	7806016	Collected: 12/22/1	6 11:42	Received: 12	2/22/16 13:15	Matrix: Water	
Sample: MW-15B MS/MSD Parameters	Lab ID: 204	7806016 Units	Collected: 12/22/1	6 11:42 DF	Received: 12	2/22/16 13:15 Analyzed	Matrix: Water CAS No.	Qua
Parameters	Results	Units		DF	Prepared	Analyzed		Qua
Parameters 015M DRO/ORO Organics	Results Analytical Meth	Units	Report Limit	DF	Prepared ethod: EPA 3535	Analyzed	CAS No.	
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40)	Results	Units	Report Limit	DF ration M	Prepared	Analyzed 5 01/06/17 01:20	CAS No.	Qua
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Currogates	Results Analytical Methods ND ND	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF ration M 1 1	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52	Analyzed 01/06/17 01:20 01/06/17 01:20	CAS No.	
Parameters 015M DRO/ORO Organics viesel Range Organic (C10-C28) viil Range Organics (>C28-C40) viil Range Organics (>C28-C40) viil Range Organics (>C28-C40)	Results Analytical Methods ND ND 53	Units nod: EPA 80 mg/L mg/L %.	Report Limit 015B Modified Prepa 0.50 1.0	DF ration M 1 1	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20	CAS No.	
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Currogates -Pentacosane (S) -Terphenyl (S)	Results Analytical Methods ND ND 53 52	Units mod: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20	CAS No.	
Parameters 1015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 1021 GCV BTEX, MTBE, GRO	Analytical Meth ND ND 53 52 Analytical Meth	Units mod: EPA 80 mg/L mg/L %. %. hod: EPA 80	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121	DF ration M 1 1 1	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20	CAS No. 0 0 0 0 629-99-2 0 84-15-1	
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 1021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates	Results Analytical Method ND ND 53 52 Analytical Method	Units nod: EPA 86 mg/L mg/L %. %. nod: EPA 86 ug/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0	DF ration M 1 1 1 1	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 12/30/16 16:36	CAS No. 0 0 0 0 629-99-2 0 84-15-1	
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates -Bromofluorobenzene (S)	Results Analytical Method ND ND 53 52 Analytical Method ND 90	Units nod: EPA 86 mg/L mg/L %. %. nod: EPA 86 ug/L %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148	DF ration M 1 1 1 1 1	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20	CAS No. 0 0 0 0 629-99-2 0 84-15-1	
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates 1-Bromofluorobenzene (S) 2020 MET ICPMS	Results Analytical Method ND ND 53 52 Analytical Method ND 90 Analytical Method	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth	DF ration M 1 1 1 1 1 1 nod: EPA	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 12/30/16 16:36	CAS No. 0 0 0 0 0 0 629-99-2 0 84-15-1	
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates 1-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic	Results Analytical Method ND ND 53 52 Analytical Method ND 90 Analytical Method 0.0014	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 12/30/16 16:30 12/30/16 16:30	CAS No. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates -Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium	Results Analytical Method ND ND 53 52 Analytical Method ND 90 Analytical Method 0.0014 ND	Units mg/L mg/L %. hod: EPA 86 ug/L %. hod: EPA 66 mg/L mg/L mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3538 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 4 3010 12/30/16 06:50 12/30/16 06:50	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 12/30/16 16:36 12/30/16 16:36 01/06/17 10:34 01/06/17 10:34	CAS No. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates -Bromofluorobenzene (S) 020 MET ICPMS Arsenic Chromium ead	Analytical Method ND ND S3 52 Analytical Method ND 90 Analytical Method ND ND ND ND ND	Units mg/L mg/L %. hod: EPA 86 ug/L %. hod: EPA 66 mg/L mg/L mg/L mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3538 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 06:50 12/30/16 06:50 12/30/16 06:50	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 12/30/16 16:36 12/30/16 16:36 01/06/17 10:34 01/06/17 10:34 01/06/17 10:34	CAS No. 0 629-99-2 0 84-15-1 6 460-00-4 1 7440-38-2 1 7440-47-3 1 7439-92-1	
Parameters 015M DRO/ORO Organics itesel Range Organic (C10-C28) itesel Range Organics (>C28-C40) iterrogates -Pentacosane (S) -Terphenyl (S) 021 GCV BTEX, MTBE, GRO itasoline Range Organics iterrogates -Bromofluorobenzene (S) 020 MET ICPMS rsenic thromium ead	Analytical Method ND ND 53 52 Analytical Method ND 90 Analytical Method ND ND ND ND ND ND ND ND	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0010 0.0050	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 12/30/16 16:36 12/30/16 16:36 01/06/17 10:34 01/06/17 10:34 01/06/17 10:34	CAS No. 0 629-99-2 0 84-15-1 6 460-00-4 1 7440-38-2 1 7440-47-3 1 7439-92-1	
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (>C28-C40) Dil Range Organics (S) Description of the property	Analytical Method ND ND 53 52 Analytical Method ND 90 Analytical Method ND ND ND ND ND ND ND ND	Units mod: EPA 86 mg/L %. %. nod: EPA 86 ug/L %. nod: EPA 66 mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Report Limit	DF ration M 1 1 1 1 1 1 1 1 1 1 nod: EPA	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 12/30/16 16:36 12/30/16 16:36 01/06/17 10:34 01/06/17 10:34 01/06/17 10:34	CAS No. 0 629-99-2 0 84-15-1 6 460-00-4 1 7440-38-2 1 7440-47-3 1 7439-92-1	
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S) -Terphenyl (S) 021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates -Bromofluorobenzene (S) 020 MET ICPMS Arsenic Chromium lead d'anadium 020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Results Analytical Method ND 53 52 Analytical Method ND 90 Analytical Method ND ND ND ND ND Analytical Method ND ND ND ND Analytical Method	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0010 0.0050	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 12/30/16 16:36 12/30/16 16:36 01/06/17 10:34 01/06/17 10:34 01/06/17 10:34 01/06/17 10:34	CAS No. 0 629-99-2 0 84-15-1 6 460-00-4 1 7440-38-2 1 7440-47-3 1 7439-92-1 1 7440-62-2 0 7440-38-2	
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) Di-Terphenyl (S)	Results Analytical Method ND 53 52 Analytical Method ND 90 Analytical Method ND ND ND ND ND ND Analytical Method ND ND ND ND Analytical Method ND ND ND Analytical Method ND ND ND Analytical Method ND ND Analytical Method	Units mod: EPA 86 mg/L %. %. nod: EPA 86 ug/L %. nod: EPA 66 mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth	DF ration M 1 1 1 1 1 1 1 1 1 1 nod: EPA	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	Analyzed 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 12/30/16 16:36 12/30/16 16:36 01/06/17 10:34 01/06/17 10:34 01/06/17 10:34 01/06/17 10:34	CAS No. 0 629-99-2 0 84-15-1 6 460-00-4 1 7440-38-2 1 7440-47-3 1 7439-92-1 1 7440-62-2 0 7440-38-2	
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Surrogates D-Bromofluorobenzene (S) Arsenic Chromium Lead Vanadium 2020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved Lead, Dissolved	Results Analytical Method ND 53 52 Analytical Method ND 90 Analytical Method ND ND ND ND ND Analytical Method ND ND ND ND Analytical Method	Units mg/L mg/L %. hod: EPA 86 ug/L %. hod: EPA 66 mg/L mg/L mg/L mg/L hod: EPA 66 ug/L	Report Limit 0.15B Modified Preparation 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methors 0.0010 0.0010 0.0050 0.20 Preparation Methors 1.0	DF ration M 1 1 1 1 1 1 1 1 1 nod: EP/ 1 1 nod: EP/	Prepared lethod: EPA 3535 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/28/16 10:52 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	Analyzed 5 01/06/17 01:20 01/06/17 01:20 01/06/17 01:20 12/30/16 16:36 12/30/16 16:36 01/06/17 10:34 01/06/17 10:34 01/06/17 10:34 01/06/17 10:34 01/06/17 10:34	CAS No. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	



Project: PUMA TERMINAL MW SAMPLING

Date: 01/12/2017 09:20 AM

Sample: MW-15B MS/MSD	Lab ID: 2047	7806016	Collected: 12/22/16	11:42	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Metho	od: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:20	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 7	470 Preparation Metho	od: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:17	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	270 by SIM Preparatio	n Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	5 83-32-9	R1
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	5 208-96-8	R1
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	5 120-12-7	R1
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	5 56-55-3	R1
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	5 50-32-8	R1
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52			R1
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52			R1
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52			R1
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52			R1
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52			R1
Fluoranthene	ND	-	0.10	1	12/28/16 11:52			R1
		ug/L						
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52			R1
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52			R1
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52			R1
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52			R1
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52			R1
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	5 129-00-0	R1
Surrogates								
2-Fluorobiphenyl (S)	83	%.	25-150	1	12/28/16 11:52			
Terphenyl-d14 (S)	64	%.	25-150	1	12/28/16 11:52	01/06/17 16:35	5 1718-51-0	
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	22.9	ug/L	4.0	1		12/28/16 17:35	5 67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 17:35	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 17:35	5 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 17:35	5 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 17:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 17:35	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 17:35	5 75-15-0	L1,M0
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 17:35		·
	ND	ug/L	0.50	1		12/28/16 17:35		
unioropenzene	ND	ug/L	0.50	1		12/28/16 17:35		
			0.00					
Chloroethane		-	0.50	1		12/28/10 17:35) b/-bb-3	
Chloroethane Chloroform	ND	ug/L	0.50 0.50	1 1		12/28/16 17:35 12/28/16 17:35		
Chloroethane Chloroform Chloromethane	ND ND	ug/L ug/L	0.50	1		12/28/16 17:35	5 74-87-3	
Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane	ND ND ND	ug/L ug/L ug/L	0.50 0.20	1 1		12/28/16 17:35 12/28/16 17:35	5 74-87-3 5 96-12-8	
Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane	ND ND ND ND	ug/L ug/L ug/L ug/L	0.50 0.20 0.50	1 1 1		12/28/16 17:35 12/28/16 17:35 12/28/16 17:35	5 74-87-3 5 96-12-8 5 124-48-1	
Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane	ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L	0.50 0.20 0.50 1.0	1 1 1 1		12/28/16 17:35 12/28/16 17:35 12/28/16 17:35 12/28/16 17:35	5 74-87-3 5 96-12-8 5 124-48-1 5 106-93-4	
Chlorobenzene Chloroethane Chloroform Chloromethane 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane 1,2-Dibromoethane Dichlorodifluoromethane 1,1-Dichloroethane	ND ND ND ND	ug/L ug/L ug/L ug/L	0.50 0.20 0.50	1 1 1		12/28/16 17:35 12/28/16 17:35 12/28/16 17:35	5 74-87-3 5 96-12-8 5 124-48-1 5 106-93-4 5 75-71-8	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-15B MS/MSD	Lab ID: 204	7806016	Collected: 12/22/1	6 11:42	Received:	12/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 17:3	5 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 17:3	5 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 17:3	5 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 17:3	5 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 17:3	5 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 17:3	5 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 17:3	5 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 17:3	5 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 17:3	5 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 17:3		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 17:3		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 17:3		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 17:3		
Styrene	ND	ug/L	1.0	1		12/28/16 17:3		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 17:3		
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 17:3		
Toluene	ND ND	ug/L ug/L	0.50	1		12/28/16 17:3		
	ND ND	-		1		12/28/16 17:3		
1,1,1-Trichloroethane		ug/L	0.50					
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 17:3		
Trichloroethene	ND	ug/L	0.50	1		12/28/16 17:3		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 17:3		
√inyl chloride	ND	ug/L	0.50	1		12/28/16 17:3		
m&p-Xylene	ND	ug/L	2.0	1			5 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 17:3	5 95-47-6	
Surrogates	400	0.4	70.400			10/00/10 17 0	- 1000 -0 -	
Dibromofluoromethane (S)	106	%.	72-126	1		12/28/16 17:3		
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/28/16 17:3		
Toluene-d8 (S)	100	%.	79-119	1		12/28/16 17:3	5 2037-26-5	
Sample: FB-122216	Lab ID: 204	7806017	Collected: 12/22/1	6 11:50	Received:	12/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
B021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 17:5	4	
4-Bromofluorobenzene (S)	89	%.	44-148	1		12/30/16 17:5	4 460-00-4	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	26.2	ug/L	4.0	1		12/28/16 22:0	4 67-64-1	C9
	ND	ug/L	0.50	1		12/28/16 22:0		
Benzene		ug/L	0.50	1		12/28/16 22:0		
	ND	ug/ L						
Benzene Bromodichloromethane Bromoform	ND ND	-	0.50	1		12/28/16 22:0	4 75-25-2	
Bromodichloromethane		ug/L	0.50 0.50	1 1		12/28/16 22:0 12/28/16 22:0		
Bromodichloromethane Bromoform	ND	-					4 74-83-9	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: FB-122216	Lab ID: 204	47806017	Collected: 12/22/1	6 11:50	Received:	12/22/16 13:15 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Me	thod: EPA 50	030B/8260					
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 22:04	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 22:04	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 22:04	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 22:04	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 22:04	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 22:04	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 22:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 22:04	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 22:04	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 22:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 22:04		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 22:04		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 22:04	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 22:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 22:04		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 22:04		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 22:04		
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 22:04		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 22:04		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 22:04		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 22:04		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 22:04		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 22:04		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 22:04		
Styrene	ND	ug/L	1.0	1		12/28/16 22:04		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 22:04		
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 22:04		
Toluene	ND	ug/L	0.50	1		12/28/16 22:04		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 22:04		
1,1,2-Trichloroethane	ND ND	ug/L	0.50	1		12/28/16 22:04		
Trichloroethene	ND	ug/L	0.50	1		12/28/16 22:04		
Trichlorofluoromethane	ND ND	ug/L	0.50	1		12/28/16 22:04		
/inyl chloride	ND ND	ug/L	0.50	1		12/28/16 22:04		
m&p-Xylene	ND ND	ug/L	2.0	1			179601-23-1	
o-Xylene	ND ND	ug/L ug/L	1.0	1		12/28/16 22:04		
Surrogates	אוט	ug/L	1.0	'		12/20/10 22.04	· 30-41-0	
Dibromofluoromethane (S)	105	%.	72-126	1		12/28/16 22:04	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		12/28/16 22:04		
Toluene-d8 (S)	102	%.	79-119	1		12/28/16 22:04		



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 71030 Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008,

2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

METHOD BLANK: 297171 Matrix: Water

Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008,

2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers Gasoline Range Organics ug/L ND 50.0 12/30/16 07:53 12/30/16 07:53 4-Bromofluorobenzene (S) %. 92 44-148

LABORATORY CONTROL SAMPLE: 297172 Spike LCS LCS % Rec Parameter % Rec Limits Qualifiers Units Conc. Result Gasoline Range Organics 427 85 61-136 ug/L 500 4-Bromofluorobenzene (S) %. 95 44-148

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297176 297175 MS MSD 2047806016 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual ND Gasoline Range Organics ug/L 500 500 438 439 83 83 15-147 0 20 4-Bromofluorobenzene (S) %. 94 94 44-148

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 71004 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

METHOD BLANK: 297033 Matrix: Water

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 12/29/16 17:11

LABORATORY CONTROL SAMPLE: 297034

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury ug/L 1.1 106 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297035 297036

MS MSD 2047713002 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual ND 1 1.0 75-125 0 20 Mercury ug/L 1 1.0 101 101

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 71005 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297037 Matrix: Water

Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 12/29/16 16:16

LABORATORY CONTROL SAMPLE: 297038

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury ug/L 1.1 110 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297039 297040

MS MSD 2047806016 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual ND 1 1.0 75-125 0 20 Mercury ug/L 1 1.0 105 105

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 71108 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

METHOD BLANK: 297493 Matrix: Water

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury, Dissolved ug/L ND 0.20 12/29/16 18:44

LABORATORY CONTROL SAMPLE: 297494

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury, Dissolved ug/L 1.1 110 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297495 297496

MS MSD MS 2047713002 Spike Spike MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Mercury, Dissolved ND 1 75-125 20 ug/L 1 1.1 1.1 109 110

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 71110 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297497 Matrix: Water

Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury, Dissolved ug/L ND 0.20 12/29/16 18:13

LABORATORY CONTROL SAMPLE: 297498

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury, Dissolved ug/L 1.1 113 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297499 297500

MS MSD 2047806016 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Mercury, Dissolved ND 1 1.0 75-125 0 20 ug/L 1 1.0 102 102

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 71131 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011,

2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297578 Matrix: Water

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011,

2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/06/17 10:11	
Chromium	mg/L	ND	0.0010	01/06/17 10:11	
Lead	mg/L	ND	0.0010	01/06/17 10:11	
Vanadium	mg/L	ND	0.0050	01/06/17 10:11	

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	100	85-115	
Lead	mg/L	.02	0.019	97	84-115	
Vanadium	mg/L	.02	0.020	98	81-115	

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	CATE: 29758	0		297581							
			MS	MSD								
		2047806016	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	0.0014	.02	.02	0.021	0.020	99	94	80-120	5	20	
Chromium	mg/L	ND	.02	.02	0.020	0.019	98	91	80-120	6	20	
Lead	mg/L	ND	.02	.02	0.020	0.019	100	94	80-120	6	20	
Vanadium	mg/L	ND	.02	.02	0.021	0.020	100	94	80-120	6	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 71126 Analysis Method: EPA 6020

QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011,

2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297560 Matrix: Water

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011,

2047806012, 2047806013, 2047806015, 2047806016

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND ND	1.0	01/03/17 17:55	
Chromium, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Lead, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Vanadium, Dissolved	ug/L	ND	5.0	01/03/17 17:55	

LABORATORY CONTROL SAMPLE:	297561	Spike	LCS	LCS	% Rec	0 175
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.2	101	80-120	
Chromium, Dissolved	ug/L	20	20.0	100	80-120	
Lead, Dissolved	ug/L	20	19.4	97	80-120	
Vanadium, Dissolved	ug/L	20	20.3	101	80-120	

MATRIX SPIKE & MATRIX SF	PIKE DUPLIC	CATE: 29756	2		297563							
Parameter	Units	2047806016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L		20	20	20.2	19.9	97	96	 75-125		20	
Chromium, Dissolved	ug/L	ND	20	20	19.1	19.6	95	98	75-125	3	20	
Lead, Dissolved	ug/L	ND	20	20	20.4	20.2	102	101	75-125	1	20	
Vanadium, Dissolved	ug/L	ND	20	20	20.0	19.8	97	96	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 70952 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level

Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008,

2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

METHOD BLANK: 296849 Matrix: Water

Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008,

2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND ND	0.50	12/28/16 16:07	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1,2-Trichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1-Dichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1-Dichloroethene	ug/L	ND	0.50	12/28/16 16:07	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	12/28/16 16:07	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/28/16 16:07	
1,2-Dichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,2-Dichloropropane	ug/L	ND	0.50	12/28/16 16:07	
2-Butanone (MEK)	ug/L	ND	2.0	12/28/16 16:07	
2-Hexanone	ug/L	ND	1.0	12/28/16 16:07	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	12/28/16 16:07	
Acetone	ug/L	ND	4.0	12/28/16 16:07	
Benzene	ug/L	ND	0.50	12/28/16 16:07	
Bromodichloromethane	ug/L	ND	0.50	12/28/16 16:07	
Bromoform	ug/L	ND	0.50	12/28/16 16:07	
Bromomethane	ug/L	ND	0.50	12/28/16 16:07	
Carbon disulfide	ug/L	ND	1.0	12/28/16 16:07	
Carbon tetrachloride	ug/L	ND	0.50	12/28/16 16:07	
Chlorobenzene	ug/L	ND	0.50	12/28/16 16:07	
Chloroethane	ug/L	ND	0.50	12/28/16 16:07	
Chloroform	ug/L	ND	0.50	12/28/16 16:07	
Chloromethane	ug/L	ND	0.50	12/28/16 16:07	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/28/16 16:07	
cis-1,3-Dichloropropene	ug/L	ND	0.50	12/28/16 16:07	
Dibromochloromethane	ug/L	ND	0.50	12/28/16 16:07	
Dichlorodifluoromethane	ug/L	ND	1.0	12/28/16 16:07	
Ethylbenzene	ug/L	ND	0.50	12/28/16 16:07	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/28/16 16:07	
m&p-Xylene	ug/L	ND	2.0	12/28/16 16:07	
Methyl acetate	ug/L	ND	2.0	12/28/16 16:07	
Methyl-tert-butyl ether	ug/L	ND	0.50	12/28/16 16:07	
Methylene Chloride	ug/L	ND	0.50	12/28/16 16:07	
o-Xylene	ug/L	ND	1.0	12/28/16 16:07	
Styrene	ug/L	ND	1.0	12/28/16 16:07	
Tetrachloroethene	ug/L	ND	0.50	12/28/16 16:07	
Toluene	ug/L	ND	0.50	12/28/16 16:07	
trans-1,2-Dichloroethene	ug/L	ND	0.50	12/28/16 16:07	
trans-1,3-Dichloropropene	ug/L	ND	0.50	12/28/16 16:07	
Trichloroethene	ug/L	ND	0.50	12/28/16 16:07	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

METHOD BLANK: 296849 Matrix: Water

Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008,

2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	12/28/16 16:07	
Vinyl chloride	ug/L	ND	0.50	12/28/16 16:07	
4-Bromofluorobenzene (S)	%.	100	68-124	12/28/16 16:07	
Dibromofluoromethane (S)	%.	103	72-126	12/28/16 16:07	
Toluene-d8 (S)	%.	99	79-119	12/28/16 16:07	

LABORATORY CONTROL SAMPLE	: 296850					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	56.5	113	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	51.3	103	15-179	
1,1,2-Trichloroethane	ug/L	50	51.6	103	58-144	
1,1-Dichloroethane	ug/L	50	54.6	109	63-129	
1,1-Dichloroethene	ug/L	50	53.9	108	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	51.1	102	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	53.4	107	52-161	
1,2-Dichloroethane	ug/L	50	55.6	111	57-148	
1,2-Dichloropropane	ug/L	50	54.6	109	66-128	
2-Butanone (MEK)	ug/L	50	59.7	119	32-183	
2-Hexanone	ug/L	50	54.3	109	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	53.7	107	26-171	
Acetone	ug/L	50	61.3	123	22-165	
Benzene	ug/L	50	56.8	114	62-131	
Bromodichloromethane	ug/L	50	51.1	102	69-132	
Bromoform	ug/L	50	46.7	93	35-166	
Bromomethane	ug/L	50	52.1	104	34-158	
Carbon disulfide	ug/L	50	65.6	131	31-128 L	.0
Carbon tetrachloride	ug/L	50	52.0	104	54-144	
Chlorobenzene	ug/L	50	51.6	103	70-127	
Chloroethane	ug/L	50	46.9	94	17-195	
Chloroform	ug/L	50	51.9	104	73-134	
Chloromethane	ug/L	50	48.2	96	17-153	
cis-1,2-Dichloroethene	ug/L	50	51.8	104	68-129	
cis-1,3-Dichloropropene	ug/L	50	52.4	105	72-138	
Dibromochloromethane	ug/L	50	49.1	98	49-146	
Dichlorodifluoromethane	ug/L	50	45.4	91	10-179	
Ethylbenzene	ug/L	50	49.8	100	66-126	
Isopropylbenzene (Cumene)	ug/L	50	48.7	97	51-138	
m&p-Xylene	ug/L	100	100	100	65-129	
Methyl acetate	ug/L	50	54.7	109	20-142	
Methyl-tert-butyl ether	ug/L	50	51.7	103	37-166	
Methylene Chloride	ug/L	50	56.7	113	46-168	
o-Xylene	ug/L	50	50.0	100	65-124	

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Project: PUMA TERMINAL MW SAMPLING

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LABORATORY CONTROL SAMPLE:	296850					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Styrene	ug/L	50	50.9	102	72-133	
Tetrachloroethene	ug/L	50	48.9	98	46-157	
Toluene	ug/L	50	53.0	106	69-126	
trans-1,2-Dichloroethene	ug/L	50	53.3	107	60-129	
trans-1,3-Dichloropropene	ug/L	50	54.3	109	59-149	
Trichloroethene	ug/L	50	53.5	107	67-132	
Trichlorofluoromethane	ug/L	50	57.2	114	39-171	
Vinyl chloride	ug/L	50	42.6	85	27-149	
4-Bromofluorobenzene (S)	%.			99	68-124	
Dibromofluoromethane (S)	%.			104	72-126	
Toluene-d8 (S)	%.			102	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 296851 296852												
			MS	MSD								
		2047806016	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	65.0	56.2	130	112	54-137	14	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	57.2	49.4	114	99	15-187	15	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	56.1	49.1	112	98	59-148	13	20	
1,1-Dichloroethane	ug/L	ND	50	50	60.7	53.2	121	106	59-133	13	20	
1,1-Dichloroethene	ug/L	ND	50	50	63.0	55.4	126	111	44-146	13	20	
1,2-Dibromo-3-	ug/L	ND	50	50	56.4	48.8	113	98	23-166	14	20	
chloropropane												
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	58.0	52.6	116	105	55-166	10	20	
1,2-Dichloroethane	ug/L	ND	50	50	61.0	52.4	122	105	56-154	15	20	
1,2-Dichloropropane	ug/L	ND	50	50	60.2	52.5	120	105	62-135	14	20	
2-Butanone (MEK)	ug/L	ND	50	50	62.5	56.9	125	114	20-205	9	20	
2-Hexanone	ug/L	ND	50	50	56.3	51.1	113	102	25-189	10	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	58.2	51.1	116	102	23-184	13	20	
Acetone	ug/L	22.9	50	50	72.3	64.7	99	84	11-217	11	20	
Benzene	ug/L	ND	50	50	64.5	55.1	129	110	52-141	16	20	
Bromodichloromethane	ug/L	ND	50	50	57.0	49.8	114	100	70-134	14	20	
Bromoform	ug/L	ND	50	50	51.4	44.6	103	89	37-171	14	20	
Bromomethane	ug/L	ND	50	50	59.3	51.5	119	103	34-155	14	20	
Carbon disulfide	ug/L	ND	50	50	83.1	68.3	166	136	28-130	19	20	M0
Carbon tetrachloride	ug/L	ND	50	50	61.2	53.7	122	107	48-146	13	20	
Chlorobenzene	ug/L	ND	50	50	58.6	50.3	117	101	67-129	15	20	
Chloroethane	ug/L	ND	50	50	54.3	47.6	109	95	12-192	13	20	
Chloroform	ug/L	ND	50	50	57.9	50.5	116	101	66-143	14	20	
Chloromethane	ug/L	ND	50	50	53.6	47.3	106	94	14-155	13	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	59.4	52.9	119	106	56-141	12	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	59.2	51.3	118	103	70-139	14	20	
Dibromochloromethane	ug/L	ND	50	50	53.5	47.2	107	94	50-150	13	20	
Dichlorodifluoromethane	ug/L	ND	50	50	54.8	47.6	110	95	10-173	14	20	
Ethylbenzene	ug/L	ND	50	50	57.5	49.5	115	99	57-135	15	20	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

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MATRIX SPIKE & MATRIX SPIK	KE DUPLIC	ATE: 29685	1		296852							
			MS	MSD								
		2047806016	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Isopropylbenzene (Cumene)	ug/L	ND	50	50	56.9	50.9	114	102	40-146	11	20	
m&p-Xylene	ug/L	ND	100	100	115	101	115	101	56-136	13	20	
Methyl acetate	ug/L	ND	50	50	51.2	47.0	102	94	10-142	9	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	56.9	50.4	114	101	35-176	12	20	
Methylene Chloride	ug/L	ND	50	50	60.5	51.8	121	104	45-166	16	20	
o-Xylene	ug/L	ND	50	50	56.5	49.7	113	99	57-133	13	20	
Styrene	ug/L	ND	50	50	48.5	41.6	97	83	58-144	15	20	
Tetrachloroethene	ug/L	ND	50	50	58.7	51.1	117	102	48-143	14	20	
Toluene	ug/L	ND	50	50	59.0	52.4	118	105	59-136	12	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	61.9	54.3	124	109	57-132	13	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	59.5	51.5	119	103	59-154	14	20	
Trichloroethene	ug/L	ND	50	50	61.9	53.5	124	107	58-140	15	20	
Trichlorofluoromethane	ug/L	ND	50	50	68.2	60.0	136	120	24-175	13	20	
Vinyl chloride	ug/L	ND	50	50	50.3	43.2	101	86	21-150	15	20	
4-Bromofluorobenzene (S)	%.						103	99	68-124			
Dibromofluoromethane (S)	%.						103	104	72-126			
Toluene-d8 (S)	%.						100	102	79-119			

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 70938 Analysis Method: EPA 8015B Modified QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011,

2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 296784 Matrix: Water

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011,

2047806012, 2047806013, 2047806015, 2047806016

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/05/17 17:51	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/05/17 17:51	
n-Pentacosane (S)	%.	35	16-137	01/05/17 17:51	
o-Terphenyl (S)	%.	41	10-121	01/05/17 17:51	

LABORATORY CONTROL SAMPLE:	296785					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.2J	50	10-115	
n-Pentacosane (S)	%.			66	16-137	
o-Terphenyl (S)	%.			77	10-121	

MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 29680	1		296802							
			MS	MSD								
		2047806016	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.8	.8	0.58	0.71	52	69	10-122	21	20	R1
n-Pentacosane (S)	%.						64	76	16-137			
o-Terphenyl (S)	%.						76	91	10-121			

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 70942 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047806002, 2047806003

METHOD BLANK: 296823 Matrix: Water

Associated Lab Samples: 2047806002, 2047806003

		Blank Reporting			
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/06/17 14:35	
Acenaphthene	ug/L	ND	0.10	01/06/17 14:35	
Acenaphthylene	ug/L	ND	0.10	01/06/17 14:35	
Anthracene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(a)anthracene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(a)pyrene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Chrysene	ug/L	ND	0.10	01/06/17 14:35	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/06/17 14:35	
Fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Fluorene	ug/L	ND	0.10	01/06/17 14:35	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/06/17 14:35	
Naphthalene	ug/L	ND	0.10	01/06/17 14:35	
Phenanthrene	ug/L	ND	0.10	01/06/17 14:35	
Pyrene	ug/L	ND	0.10	01/06/17 14:35	
2-Fluorobiphenyl (S)	%.	65	25-150	01/06/17 14:35	
Terphenyl-d14 (S)	%.	56	25-150	01/06/17 14:35	

LABORATORY CONTROL SAMPLE:	296824					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L		2.4	60	35-150	
Acenaphthene	ug/L	4	2.6	65	35-150	
Acenaphthylene	ug/L	4	2.5	63	35-150	
Anthracene	ug/L	4	3.0	76	35-150	
Benzo(a)anthracene	ug/L	4	2.7	66	35-150	
Benzo(a)pyrene	ug/L	4	2.5	61	35-150	
Benzo(b)fluoranthene	ug/L	4	2.3	58	35-150	
Benzo(g,h,i)perylene	ug/L	4	2.6	64	35-150	
Benzo(k)fluoranthene	ug/L	4	2.3	58	35-150	
Chrysene	ug/L	4	2.5	62	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.1	77	35-150	
Fluoranthene	ug/L	4	2.5	62	35-150	
Fluorene	ug/L	4	2.5	61	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	2.9	73	35-150	
Naphthalene	ug/L	4	2.3	58	35-150	
Phenanthrene	ug/L	4	2.7	67	35-150	
Pyrene	ug/L	4	2.0	49	35-150	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

LABORATORY CONTROL SAMPLE:	296824					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			83	25-150	
Terphenyl-d14 (S)	%.			71	25-150	

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Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 70943 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047806004, 2047806005, 2047806006, 2047806007, 2047806008

METHOD BLANK: 296825 Matrix: Water

Associated Lab Samples: 2047806004, 2047806005, 2047806006, 2047806007, 2047806008

		Blank Reporting			
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/05/17 11:30	
Acenaphthene	ug/L	ND	0.10	01/05/17 11:30	
Acenaphthylene	ug/L	ND	0.10	01/05/17 11:30	
Anthracene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(a)anthracene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(a)pyrene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Chrysene	ug/L	ND	0.10	01/05/17 11:30	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/05/17 11:30	
Fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Fluorene	ug/L	ND	0.10	01/05/17 11:30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/05/17 11:30	
Naphthalene	ug/L	ND	0.10	01/05/17 11:30	
Phenanthrene	ug/L	ND	0.10	01/05/17 11:30	
Pyrene	ug/L	ND	0.10	01/05/17 11:30	
2-Fluorobiphenyl (S)	%.	97	25-150	01/05/17 11:30	
Terphenyl-d14 (S)	%.	98	25-150	01/05/17 11:30	

LABORATORY CONTROL SAMPLE:	296826					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.3	83	35-150	
Acenaphthene	ug/L	4	3.6	89	35-150	
Acenaphthylene	ug/L	4	3.4	86	35-150	
Anthracene	ug/L	4	4.5	112	35-150	
Benzo(a)anthracene	ug/L	4	3.9	97	35-150	
Benzo(a)pyrene	ug/L	4	3.6	89	35-150	
Benzo(b)fluoranthene	ug/L	4	3.6	90	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.1	101	35-150	
Benzo(k)fluoranthene	ug/L	4	3.6	90	35-150	
Chrysene	ug/L	4	3.6	91	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.5	113	35-150	
Fluoranthene	ug/L	4	3.6	91	35-150	
Fluorene	ug/L	4	3.5	88	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.3	108	35-150	
Naphthalene	ug/L	4	3.1	78	35-150	
Phenanthrene	ug/L	4	3.9	97	35-150	
Pyrene	ug/L	4	3.3	82	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

LABORATORY CONTROL SAMPLE: 296826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			85	25-150	
Terphenyl-d14 (S)	%.			91	25-150	

MATRIX SPIKE & MATRIX SI	PIKE DUPLIC	ATE: 29682			296828							
Parameter	Units	2047817024 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylnaphthalene	ug/L	 ND	4	4	3.2	3.0	79	74	35-150	6	20	
Acenaphthene	ug/L	0.0055 mg/L	4	4	10.5	11.3	126	147	35-150	8	20	
Acenaphthylene	ug/L	0.000056J mg/L	4	4	3.3	3.1	81	75	35-150	7	20	
Anthracene	ug/L	0.00020 mg/L	4	4	4.2	3.8	100	91	35-150	9	20	
Benzo(a)anthracene	ug/L	0.000089J mg/L	4	4	3.4	3.1	82	74	35-150		20	
Benzo(a)pyrene	ug/L	0.000080J mg/L	4	4	2.8	2.6	67	63	35-150		20	
Benzo(b)fluoranthene	ug/L	0.00014 mg/L	4	4	2.7	2.5	65	60	35-150		20	
Benzo(g,h,i)perylene	ug/L	0.00010 mg/L	4	4	2.9	3.0	71	73	35-150		20	
Benzo(k)fluoranthene	ug/L	0.000051J mg/L	4	4	2.8	2.6	68	65	35-150		20	
Chrysene	ug/L	0.000063J mg/L	4	4	3.1	2.8	76	68	35-150		20	
Dibenz(a,h)anthracene	ug/L	ND	4	4	3.5	3.5	89	87	35-150		20	
Fluoranthene	ug/L	0.00029 mg/L	4	4	3.4	3.2	78	73	35-150		20	
Fluorene	ug/L	0.00033 mg/L	4	4	3.6	3.5	82	79	35-150			
Indeno(1,2,3-cd)pyrene	ug/L	0.000075J mg/L	4	4	3.2	3.2	79	78	35-150		20	
Naphthalene	ug/L	ND	4	4	2.9	2.9	73	71	35-150		20	
Phenanthrene	ug/L	0.00096 mg/L	4	4	4.9	5.1	97	103	35-150		20	
Pyrene	ug/L	0.00022 mg/L	4	4	3.2	3.1	75	72	35-150		20	
2-Fluorobiphenyl (S)	%.						85	80	25-150		20	
Terphenyl-d14 (S)	%.						82	74	25-150		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 70982 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 296923 Matrix: Water

Associated Lab Samples: 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/06/17 13:55	
Acenaphthene	ug/L	ND	0.10	01/06/17 13:55	
Acenaphthylene	ug/L	ND	0.10	01/06/17 13:55	
Anthracene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(a)anthracene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(a)pyrene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Chrysene	ug/L	ND	0.10	01/06/17 13:55	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/06/17 13:55	
Fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Fluorene	ug/L	ND	0.10	01/06/17 13:55	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/06/17 13:55	
Naphthalene	ug/L	ND	0.10	01/06/17 13:55	
Phenanthrene	ug/L	ND	0.10	01/06/17 13:55	
Pyrene	ug/L	ND	0.10	01/06/17 13:55	
2-Fluorobiphenyl (S)	%.	70	25-150	01/06/17 13:55	
Terphenyl-d14 (S)	%.	60	25-150	01/06/17 13:55	

LABORATORY CONTROL SAMPLE:	296924					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.7	68	35-150	
Acenaphthene	ug/L	4	2.9	72	35-150	
Acenaphthylene	ug/L	4	2.9	72	35-150	
Anthracene	ug/L	4	3.4	85	35-150	
Benzo(a)anthracene	ug/L	4	3.1	76	35-150	
Benzo(a)pyrene	ug/L	4	2.8	71	35-150	
Benzo(b)fluoranthene	ug/L	4	2.7	68	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.0	75	35-150	
Benzo(k)fluoranthene	ug/L	4	2.7	66	35-150	
Chrysene	ug/L	4	2.8	69	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.6	90	35-150	
Fluoranthene	ug/L	4	2.8	71	35-150	
Fluorene	ug/L	4	2.8	70	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.4	84	35-150	
Naphthalene	ug/L	4	2.6	64	35-150	
Phenanthrene	ug/L	4	3.1	77	35-150	
Pyrene	ug/L	4	2.3	57	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

LABORATORY CONTROL SAMPLE: 296924

Parameter Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			94	25-150	
Terphenyl-d14 (S)	%.			79	25-150	

MATRIX SPIKE & MATRIX S	PIKE DUPLICA	ATE: 29692	5 MS	MSD	296926							
		2047806016	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
2-Methylnaphthalene	ug/L	ND	4	4	2.7	3.5	69	87	35-150	23	20	R1
Acenaphthene	ug/L	ND	4	4	2.9	3.6	72	90	35-150	23	20	R1
Acenaphthylene	ug/L	ND	4	4	2.9	3.7	73	91	35-150	22	20	R1
Anthracene	ug/L	ND	4	4	3.0	3.9	76	96	35-150	23	20	R1
Benzo(a)anthracene	ug/L	ND	4	4	3.0	3.7	74	93	35-150	23	20	R1
Benzo(a)pyrene	ug/L	ND	4	4	2.5	3.2	63	80	35-150	24	20	R1
Benzo(b)fluoranthene	ug/L	ND	4	4	2.6	3.3	66	83	35-150	23	20	R1
Benzo(g,h,i)perylene	ug/L	ND	4	4	2.8	3.6	70	89	35-150	24	20	R1
Benzo(k)fluoranthene	ug/L	ND	4	4	2.6	3.4	65	84	35-150	25	20	R1
Chrysene	ug/L	ND	4	4	2.8	3.6	70	89	35-150	24	20	R1
Dibenz(a,h)anthracene	ug/L	ND	4	4	3.4	4.4	85	109	35-150	25	20	R1
Fluoranthene	ug/L	ND	4	4	2.9	3.7	73	92	35-150	22	20	R1
Fluorene	ug/L	ND	4	4	2.9	3.6	73	91	35-150	22	20	R1
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	3.2	4.1	79	101	35-150	25	20	R1
Naphthalene	ug/L	ND	4	4	2.6	3.3	65	83	35-150	24	20	R1
Phenanthrene	ug/L	ND	4	4	3.1	3.9	78	98	35-150	22	20	R1
Pyrene	ug/L	ND	4	4	2.1	2.7	54	67	35-150	22	20	R1
2-Fluorobiphenyl (S)	%.						73	96	25-150		20	
Terphenyl-d14 (S)	%.						60	78	25-150		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71522

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

Date: 01/12/2017 09:20 AM

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

_ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2047806002	EB-122116	EPA 3535	70938	EPA 8015B Modified	71466
047806003	MW-83B2	EPA 3535	70938	EPA 8015B Modified	71466
47806004	MW-AD-4	EPA 3535	70938	EPA 8015B Modified	71466
47806005	MW-33A	EPA 3535	70938	EPA 8015B Modified	71466
47806006	MW-P116	EPA 3535	70938	EPA 8015B Modified	71466
47806007	MW-P117	EPA 3535	70938	EPA 8015B Modified	71466
47806008	MW-65A	EPA 3535	70938	EPA 8015B Modified	71466
47806011	EB-122216	EPA 3535	70938	EPA 8015B Modified	71466
47806012	MW-15A	EPA 3535	70938	EPA 8015B Modified	71466
47806013	MW-15B2	EPA 3535	70938	EPA 8015B Modified	71466
47806015	DUP002	EPA 3535	70938	EPA 8015B Modified	71466
47806016	MW-15B MS/MSD	EPA 3535	70938	EPA 8015B Modified	71466
47806001	TB-122116	EPA 8015/8021	71030		
147806002	EB-122116	EPA 8015/8021	71030		
047806003	MW-83B2	EPA 8015/8021	71030		
47806004	MW-AD-4	EPA 8015/8021	71030		
47806005	MW-33A	EPA 8015/8021	71030		
47806006	MW-P116	EPA 8015/8021	71030		
47806007	MW-P117	EPA 8015/8021	71030		
47806008	MW-65A	EPA 8015/8021	71030		
47806009	FB-122116	EPA 8015/8021	71030		
47806010	TB-122216	EPA 8015/8021	71030		
47806011	EB-122216	EPA 8015/8021	71030		
47806012	MW-15A	EPA 8015/8021	71030		
47806013	MW-15B2	EPA 8015/8021	71030		
47806015	DUP002	EPA 8015/8021	71030		
47806016	MW-15B MS/MSD	EPA 8015/8021	71030		
47806017	FB-122216	EPA 8015/8021	71030		
47806002	EB-122116	EPA 3010	71131	EPA 6020	71235
47806003	MW-83B2	EPA 3010	71131	EPA 6020	71235
47806004	MW-AD-4	EPA 3010	71131	EPA 6020	71235
47806005	MW-33A	EPA 3010	71131	EPA 6020	71235
47806006	MW-P116	EPA 3010	71131	EPA 6020	71235
47806007	MW-P117	EPA 3010	71131	EPA 6020	71235
47806008	MW-65A	EPA 3010	71131	EPA 6020	71235
47806011	EB-122216	EPA 3010	71131	EPA 6020	71235
47806012	MW-15A	EPA 3010	71131	EPA 6020	71235
47806013	MW-15B2	EPA 3010	71131	EPA 6020	71235
47806015	DUP002	EPA 3010	71131	EPA 6020	71235
47806016	MW-15B MS/MSD	EPA 3010	71131	EPA 6020	71235
47806002	EB-122116	EPA 3005A	71126	EPA 6020	71232
47806003	MW-83B2	EPA 3005A	71126	EPA 6020	71232
47806004	MW-AD-4	EPA 3005A	71126	EPA 6020	71232
47806005	MW-33A	EPA 3005A	71126	EPA 6020	71232
47806006	MW-P116	EPA 3005A	71126	EPA 6020	71232
47806007	MW-P117	EPA 3005A	71126	EPA 6020	71232
47806008	MW-65A	EPA 3005A	71126	EPA 6020	71232



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2047806011	EB-122216	EPA 3005A	71126	EPA 6020	71232
2047806012	MW-15A	EPA 3005A	71126	EPA 6020	71232
047806013	MW-15B2	EPA 3005A	71126	EPA 6020	71232
047806015	DUP002	EPA 3005A	71126	EPA 6020	71232
047806016	MW-15B MS/MSD	EPA 3005A	71126	EPA 6020	71232
047806002	EB-122116	EPA 7470	71004	EPA 7470	71141
047806003	MW-83B2	EPA 7470	71004	EPA 7470	71141
047806004	MW-AD-4	EPA 7470	71004	EPA 7470	71141
047806005	MW-33A	EPA 7470	71004	EPA 7470	71141
047806006	MW-P116	EPA 7470	71004	EPA 7470	71141
047806007	MW-P117	EPA 7470	71004	EPA 7470	71141
047806008	MW-65A	EPA 7470	71005	EPA 7470	71139
047806011	EB-122216	EPA 7470	71005	EPA 7470	71139
047806012	MW-15A	EPA 7470	71005	EPA 7470	71139
047806013	MW-15B2	EPA 7470	71005	EPA 7470	71139
047806015	DUP002	EPA 7470	71005	EPA 7470	71139
047806016	MW-15B MS/MSD	EPA 7470	71005	EPA 7470	71139
047806002	EB-122116	EPA 7470	71108	EPA 7470	71142
047806003	MW-83B2	EPA 7470	71108	EPA 7470	71142
047806004	MW-AD-4	EPA 7470	71108	EPA 7470	71142
047806005	MW-33A	EPA 7470	71108	EPA 7470	71142
047806006	MW-P116	EPA 7470	71108	EPA 7470	71142
047806007	MW-P117	EPA 7470	71108	EPA 7470	71142
047806008	MW-65A	EPA 7470	71110	EPA 7470	71140
047806011	EB-122216	EPA 7470	71110	EPA 7470	71140
047806012	MW-15A	EPA 7470	71110	EPA 7470	71140
047806013	MW-15B2	EPA 7470	71110	EPA 7470	71140
047806015	DUP002	EPA 7470	71110	EPA 7470	71140
047806016	MW-15B MS/MSD	EPA 7470	71110	EPA 7470	71140
047806002	EB-122116	EPA 3510	70942	EPA 8270 by SIM	71522
047806003	MW-83B2	EPA 3510	70942	EPA 8270 by SIM	71522
047806004	MW-AD-4	EPA 3510	70943	EPA 8270 by SIM	71436
047806005	MW-33A	EPA 3510	70943	EPA 8270 by SIM	71436
047806006	MW-P116	EPA 3510	70943	EPA 8270 by SIM	71436
047806007	MW-P117	EPA 3510	70943	EPA 8270 by SIM	71436
047806008	MW-65A	EPA 3510	70943	EPA 8270 by SIM	71436
047806011	EB-122216	EPA 3510	70982	EPA 8270 by SIM	71521
047806012	MW-15A	EPA 3510	70982	EPA 8270 by SIM	71521
047806013	MW-15B2	EPA 3510	70982	EPA 8270 by SIM	71521
047806015	DUP002	EPA 3510	70982	EPA 8270 by SIM	71521
047806016	MW-15B MS/MSD	EPA 3510	70982	EPA 8270 by SIM	71521
047806001	TB-122116	EPA 5030B/8260	70952		
047806002	EB-122116	EPA 5030B/8260	70952		
047806003	MW-83B2	EPA 5030B/8260	70952		
047806004	MW-AD-4	EPA 5030B/8260	70952		



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2047806005	MW-33A	EPA 5030B/8260	70952		
2047806006	MW-P116	EPA 5030B/8260	70952		
2047806007	MW-P117	EPA 5030B/8260	70952		
2047806008	MW-65A	EPA 5030B/8260	70952		
2047806009	FB-122116	EPA 5030B/8260	70952		
2047806010	TB-122216	EPA 5030B/8260	70952		
2047806011	EB-122216	EPA 5030B/8260	70952		
2047806012	MW-15A	EPA 5030B/8260	70952		
2047806013	MW-15B2	EPA 5030B/8260	70952		
2047806015	DUP002	EPA 5030B/8260	70952		
2047806016	MW-15B MS/MSD	EPA 5030B/8260	70952		
2047806017	FB-122216	EPA 5030B/8260	70952		



Section A

Section B

CHAIN-OF-CUSTODY / A NOT CHAIN-OF-CUSTODY / A

Section C		
Invoice Information.	2047806	

Required Official Michigans	ired Project Information:		Invoice Information 2047806 Attention:		. 1621433	
Company: A Repor	nto: Efmain	(aldea	Company Name:	REGULATORY		47.
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Section D Matrix Codes	e c	COLLECTED	Preservatives			
Required Client Information MATRIX / CODE	DW COMPOS WT SAPB COMPOS START	COLLECTED	1,1000,141,100			-
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TEM #	MATRIX COD ST. SAMPLE TYPE	TIME DATE TIME O	# OF CONTAIL Unpreserved H ₂ SO ₄ HNO ₃ HCI NaOH Na ₂ S ₂ O ₃ Methanol Other	\$ \$ 33 A E A	Pace Project No./ Lab I.	╩┤
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4 MW-AD-4	WT O	12/21/10 1144	105 14	メメメメメ		
5 Mw-33A	 1	12/21/2 1405	105 14	オオオイイメ		
6 MW-P116	- 1, 1, 1 - 1 	12/21/16 1521	10 5 14	N X X X X X X		
7 MW - PILD	WTO	12/21/12 1607	105 14	XXXXXX		
8 MW-65A	WT G	12/21/6 1615	4 4	XX		
9 FB-122116	WT C	12/2/L LAB	4 4	XX		
10 TB-123216		12/6 0842	19 5 14	N N N N N N N N N N N N N N N N N N N		
11 EB-122716	 	12/22/4 0738	10 5 14	XXXXXX		
12 MW-15A	RELINQUISHED BY			BY / AFFILIATION DATE	TIME SAMPLE CONDITIONS	
ADDITIONAL COMMENTS		1	6 1315 Mille Olsa	i- Paro 12/2/6	1315 42 V W	
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71 ORIG	GINAL :	PRINT Name of SAMPLE	R: Andre Colon	I Perrored of		٤
of 73		SIGNATURE of SAMPLE	R: MM	DATE Signed (MM/DD/YY): 12/22/16	Sar See	
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Pace Analytical*

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Sample Condition Upo

WO#: 2047806

PM: JAR1

Due Date: 01/09/17

CLIENT: 98-ARCADISPR

Pace Analytic	cal
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Pace Analytical	1000 Riverbend, Blvd., Suite St. Rose, LA 70087	e F		_	Pl	
courier: Pace Courier Custody Seal on Cooler/Box P	☐ Hired Courier		X	□ UPS	S □ DHL	☐ USPS ☐ Customer ☐ Other Custody Seals intact: ☐ Yes ☐ No
Therm Find I herm		Type of	lce:	(W	Blue None	Samples on ice: [see COC]
Cooler Temperature: [see 0	COC] Tem	np should	be at	oove fre	eezing to 6°C	Date and Initials of person examining, contents: [3-33-10 LM]
emp must be measured from Ter	mperature blank when	present			Comments:	
emperature Blank Present"?		□Yes [JNo ੂ	D N/A	1	
Chain of Custody Present:		Yes [□No	□n/A	2	
Chain of Custody Complete:		√2Yes [□No	□n/A	3	
Chain of Custody Relinquished	d:	√Yes [□No	□n/a	4	
Sampler Name & Signature or		Yes	□No	□n/a	5	
Samples Arrived within Hold T		Yes	□No	□N/A	6	
Sufficient Volume:		Yes	□No	□n/a	7	
Correct Containers Used:		Yes	□No	□n/a	8	
iltered vol. Rec. for Diss. test	ts	□Yes	□No	ÐN/A	9	
Sample Labels match COC:		Yes	□No	□n/a	10	
All containers received within precautionary and/or expiration	on dates	√ Yes	□No	□N/A —	11	
All containers needing chemic been checked (except VOA, c	coliform, & O&G).	Ares	□No	□N/A	114	- Von - No
All containers preservation ch compliance with EPA recomm	necked found to be in mendation.	es	□No	□N/A	13 If added r	s preserative added? □Yes □No ecord lot no.: HNO3 H2SO4
Headspace in VOA Vials (>6	imm):	□Yes	No	□n/a	14	
Trip Blank Present	<u> </u>	Yes	□No		15	<u> </u>
Client Notification/ Resolut	tion:					Date/Time:
Comments/ Resolution:					<u></u>	<u> </u>
		<u> </u>				
						<u></u>





January 12, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 22, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely.

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202 Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047806001	TB-122116	Waler	12/21/16 00:00	12/22/16 13:15
2047806002	EB-122116	Water	12/21/16 09:17	12/22/16 13:15
2047806003	MW-83B2	Water	12/21/16 09:59	12/22/16 13:15
2047806004	MW-AD-4	Water	12/21/16 10:56	12/22/16 13:15
2047806005	MW-33A	Water	12/21/16 11:44	12/22/16 13:15
2047806006	MW-P116	Water	12/21/16 14:05	12/22/16 13:15
2047806007	MW-P117	Water	12/21/16 15:21	12/22/16 13:15
2047806008	MW-65A	Water	12/21/16 16:07	12/22/16 13:15
2047806009	FB-122116	Water	12/21/16 16:15	12/22/16 13:15
2047806010	TB-122216	Water	12/22/16 00:00	12/22/16 13:15
2047806011	EB-122216	Water	12/22/16 08:42	12/22/16 13:15
2047806012	MW-15A	Water	12/22/16 09:38	12/22/16 13:15
2047806013	MW-15B2	Water	12/22/16 10:23	12/22/16 13:15
2047806015	DUP002	Water	12/22/16 00:00	12/22/16 13:15
2047806016	MW-15B MS/MSD	Water	12/22/16 11:42	12/22/16 13:15
2047806017	FB-122216	Water	12/22/16 11:50	12/22/16 13:15



SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047806001	TB-122116	EPA 8015/8021	мнм	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806002	EB-122116	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806003	MW-83B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806004	MW-AD-4	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806005	MW-33A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806006	MW-P116	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
	•	EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806007	MW-P117	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806008	MW-65A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806009	FB-122116	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806010	TB-122216	EPA 8015/8021	мнм	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806011	EB-122216	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806012	MW-15A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806013	MW-15B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047806015	DUP002	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806016	MW-15B MS/MSD	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MH81	1	PASI-N
		EPA 7470	мнв1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806017	FB-122216	EPA 8015/8021	мнм	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Method:

EPA 8015B Modified Description: 8015M DRO/ORO Organics BBL Caribe / Arcadis PR

Client: Date:

January 12, 2017

General Information:

12 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70938

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- MSD (Lab ID: 296802)
 - Diesel Range Organic (C10-C28)





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Method:

EPA 8015/8021

Client:

Description: 8021 GCV BTEX, MTBE, GRO

Date:

BBL Caribe / Arcadis PR January 12, 2017

General Information:

16 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Method: EPA 6020

Description: 6020 MET ICPMS **Client:** BBL Caribe / Arcadis PR

Date:

January 12, 2017

General Information:

12 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client:

BBL Caribe / Arcadis PR

Date:

January 12, 2017

General Information:

12 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Method: EPA 7470

Description: 7470 Mercury

Client:

BBL Caribe / Arcadis PR

Date:

January 12, 2017

General Information:

12 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF) **Client**: BBL Caribe / Arcadis PR

Date:

January 12, 2017

General Information:

12 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Method:

EPA 8270 by SIM

Client:

Description: 8270 MSSV PAH by SIM SEP BBL Caribe / Arcadis PR

Date:

January 12, 2017

General Information:

12 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70942

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 70982

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- MSD (Lab ID: 296926)
 - · 2-Methylnaphthalene
 - Acenaphthene
 - Acenaphthylene
 - Anthracene
 - · Benzo(a)anthracene
 - · Benzo(a)pyrene





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Method: EPA 8

EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP Client: BBL Caribe / Arcadis PR Date: January 12, 2017

QC Batch: 70982

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- · Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- · Benzo(k)fluoranthene
- Chrysene
- · Dibenz(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Phenanthrene
- Pyrene



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Method: EPA 5030B/8260 Description: 8260 MSV Low Level Client: BBL Caribe / Arcadis PR Date: January 12, 2017

Analyte Comments:

QC Batch: 70952

C9: Common Laboratory Contaminant.

- DUP002 (Lab ID: 2047806015)
 - Acetone
- EB-122116 (Lab ID: 2047806002)
 - Acetone
- EB-122216 (Lab ID: 2047806011)
 - Acetone
- FB-122116 (Lab ID: 2047806009)
 - Acetone
- FB-122216 (Lab ID: 2047806017)
 - Acetone
- MW-15A (Lab ID: 2047806012)
 - Acetone
- MW-15B MS/MSD (Lab ID: 2047806016)
 - Acetone
- MW-15B2 (Lab ID: 2047806013)
 - Acetone
- MW-33A (Lab ID: 2047806005)
 - Acetone
- MW-65A (Lab ID: 2047806008)
 - Acetone
- MW-83B2 (Lab ID: 2047806003) Acetone
- MW-AD-4 (Lab ID: 2047806004)
 - Acetone
- MW-P116 (Lab ID: 2047806006)
 - Acetone
- MW-P117 (Lab ID: 2047806007) Acetone
- TB-122116 (Lab ID: 2047806001)
 - Acetone
- TB-122216 (Lab ID: 2047806010)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project:

m&p-Xylene

Date: 01/12/2017 09:20 AM

o-Xylene

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Sample: TB-122116 Lab ID: 2047806001 Collected: 12/21/16 00:00 atrix: Water Ргераге Parameters Results Units Report Limit DE CAS No. Qual 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 12/30/16 08:45 Surrogates 4-Bromofluorobenzene (S) 95 %. 44-148 1 12/30/16 08:45 460-00-4 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 56.9 ua/L 4.0 1 12/28/16 17:53 67-64-1 C9 Benzene ND ua/L 0.50 12/28/16 17:53 71-43-2 1 Bromodichloromethane ND ug/L 0.50 12/28/16 17:53 75-27-4 1 Bromoform ND ug/L 0.50 12/28/16 17:53 75-25-2 Bromomethane ND 0.50 ug/L 12/28/16 17:53 74-83-9 2-Butanone (MEK) ND ug/L 2.0 12/28/16 17:53 78-93-3 Carbon disulfide ND 12/28/16 17:53 75-15-0 ug/L 1.0 L3 Carbon tetrachloride ND 0.50 12/28/16 17:53 56-23-5 ug/L 1 Chlorobenzene ND ug/L 0.50 1 12/28/16 17:53 108-90-7 Chloroethane ND ug/L 0.50 1 12/28/16 17:53 75-00-3 Chloroform ND ug/L 0.50 1 12/28/16 17:53 67-66-3 Chloromethane 1.1 ug/L 0.50 1 12/28/16 17:53 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 12/28/16 17:53 96-12-8 Dibromochloromethane ND ug/L 0.50 1 12/28/16 17:53 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 17:53 106-93-4 ND Dichlorodifluoromethane ug/L 1.0 1 12/28/16 17:53 75-71-8 1.1-Dichloroethane NΩ 0.50 12/28/16 17:53 75-34-3 ug/L 1 1.2-Dichloroethane NΠ 0.50 12/28/16 17:53 107-06-2 ug/L 1 12/28/16 17:53 75-35-4 1.1-Dichloroethene NΩ 0.50 ug/L 1 cis-1,2-Dichloroethene ND 12/28/16 17:53 156-59-2 ug/L 1.0 1 trans-1,2-Dichloroethene ND ug/L 0.5012/28/16 17:53 156-60-5 1 1.2-Dichloropropane ND ug/L 0.50 12/28/16 17:53 78-87-5 1 cis-1,3-Dichloropropene ND 0.50 12/28/16 17:53 10061-01-5 ug/L 1 trans-1,3-Dichloropropene ND ug/L 0.50 12/28/16 17:53 10061-02-6 1 Ethylbenzene ND 0.50 12/28/16 17:53 100-41-4 ug/L 1 2-Hexanone ND ug/L 1.0 12/28/16 17:53 591-78-6 1 Isopropylbenzene (Cumene) ND ug/L 1.0 12/28/16 17:53 98-82-8 1 Methyl acetate ND ug/L 2.0 1 12/28/16 17:53 79-20-9 Methylene Chloride ND ug/L 0.50 12/28/16 17:53 75-09-2 1 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 12/28/16 17:53 108-10-1 1 Methyl-tert-butyl ether ND ug/L 0.50 12/28/16 17:53 1634-04-4 1 Styrene ND ug/L 1.0 1 12/28/16 17:53 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 1 12/28/16 17:53 79-34-5 Tetrachloroethene ND 0.50 12/28/16 17:53 ug/L 1 127-18-4 Toluene ND 0.50 12/28/16 17:53 108-88-3 ug/L 1 1,1,1-Trichloroethane ND 0.50 12/28/16 17:53 71-55-6 ug/L 1 1,1,2-Trichloroethane ND 0.50 12/28/16 17:53 79-00-5 ug/L 1 Trichloroethene ND ug/L 0.50 1 12/28/16 17:53 79-01-6 Trichlorofluoromethane ND ug/L 0.50 1 12/28/16 17:53 75-69-4 Vinyl chloride ND ug/L 0.50 12/28/16 17:53 75-01-4

REPORT OF LABORATORY ANALYSIS

ND

ND

ug/L

ug/L

2.0

1.0

12/28/16 17:53 179601-23-1

12/28/16 17:53 95-47-6



ANALYTICAL RESULTS

PUMA TERMINAL MW SAMPLING

2047906

Date: 01/12/2017 09:20 AM

Project:

Pace Project No.: 2047806					NOTE OF THE PARTY	TO THE PLAN		
Sample: TB-122116	Lab ID: 204	7806001	Collected: 12/21/1	6 00:00	Received: 12	729/10 48:15 N	//atrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Surrogates	405	0.4	70.400			40/00/40 47 50	4000 FO 7	
Dibromofluoromethane (S)	106	%.	72-126	1		12/28/16 17:53		
4-Bromofluorobenzene (S) Toluene-d8 (S)	98 100	%. %.	68-124 79-119	1 1		12/28/16 17:53 12/28/16 17:53		
Toldene-do (3)	100	/0.	79-119	'		12/26/10 17:55	2037-20-3	
Sample: EB-122116	Lab ID: 204	17806002	Collected: 12/21/1	6 09:17	Received: 12	2/22/16 13:15 N	/latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 20:39		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/05/17 20:39		
Surrogates		5 .						
n-Pentacosane (S)	42	%.	16-137	1	12/28/16 10:52	01/05/17 20:39	629-99-2	
o-Terphenyl (S)	47	%.	10-121	1	12/28/16 10:52	01/05/17 20:39	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Me	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 09:37		
4-Bromofluorobenzene (S)	91	%.	44-148	1		12/30/16 09:37	460-00-4	
6020 MET ICPMS	Analytical Me	ihod: EPA 6	020 Preparation Met	hod: EP/	A 3010			
Arsenic	ND	mg/L	0,0010	1	12/30/16 06:50	01/06/17 11:17	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:17	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Me	thod: EPA 6	020 Preparation Met	hod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/03/17 15:33		
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:33	7440-62-2	
7470 Mercury	Analytical Me	thod: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:57	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Me	thod: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:30	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Me	thod: EPA 8	270 by SIM Preparat	ion Meth	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	1 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1		01/06/17 20:14		
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	4 50-32-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC

St. Rose, LA 70087 (504)469-0333

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/12/2017 09:20 AM

2047806

Sample: EB-122116 Lab ID: 2047806002

Collected: 12/21/16 09:17

Sample: LB-122110	Lab 10. 204	7800002	Collected. 12/21/1	0 08.17	ACO!	TITLE	atrix. Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Anaiyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	.70 by SIM Preparati	on Met	hod: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	129-00-0	
Surrogates		•						
2-Fluorobiphenyl (S)	63	%.	25-150	1	12/28/16 10:04	01/06/17 20:14	321-60-8	
Terphenyl-d14 (S)	49	%.	25-150	1	12/28/16 10:04	01/06/17 20:14	1718-51-0	
8260 MSV Low Level	Analytical Met	hod: EPA 50	30B/8260					
Acetone	29.5	ug/L	4.0	1		12/28/16 18:11	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 18:11	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 18:11	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 18:11	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 18:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 18:11	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 18:11	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 18:11	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 18:11	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 18:11	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 18:11	67-66-3	
Chloromethane	0.78	ug/L	0.50	1		12/28/16 18:11	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 18:11	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 18:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 18:11	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 18:11	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:11	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 18:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 18:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:11	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 18:11	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 18:11	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 18:11	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 18:11	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 18:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 18:11	108-10-1	

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ANALYTICAL RESULTS

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PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: EB-122116	Lab ID: 204	7806002	Collected: 12/21/1	6 09:17	Received.	Sal 15	at Water	•
Parameters	Results	Units	Report Limit	DF	Prepared	Sico fice	CAS No.	Qual
8260 MSV Low Level	Analytical Meti	hod: EPA 5	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 18:11	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 18:11	100-42-5	
1,1,2,2-Tetrachloroethane	NÐ	ug/L	0.50	1		12/28/16 18:11	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 18:11	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 18:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:11		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:11	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 18:11		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 18:11		
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 18:11		
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 18:11		
o-Xylene	ND	ug/L	1.0	1		12/28/16 18:11		
Surrogates	140	ugri	1.0	Ī		12/20/10 10.11	00-47-0	
Dibromofluoromethane (S)	104	%.	72-126	1		12/28/16 18:11	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 18:11	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/28/16 18:11		
Totalia da (a)	101	70.	75 113	'		12/20/10 10:11	2007 20 5	
Sample: MW-83B2	Lab ID: 204	7806003	Collected: 12/21/	16 09:59	Received: 12	2/22/16 13:15 M	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	aration M	lethod: EPA 3535)		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 21:07		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/05/17 21:07		
Surrogates	ND	myrc	1.0	'	12/20/10 10:52	01/05/11 21.07		
n-Pentacosane (S)	18	%.	16-137	1	12/28/16 10:52	01/05/17 21:07	629-99-2	
o-Terphenyl (S)	18	%.	10-121	1		01/05/17 21:07		
o respinosty (o)	10	70.	10 121	•	12/20/10 10:02	01/03/11 21:07	04 10 1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 09:11		
4-Bromofluorobenzene (S)	90	%.	44-148	1		12/30/16 09:11	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EP	A 3010			
Arsenic	0.0019	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:21	7440-38-2	
Chromium	0.0056	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:21	7440-47-3	
Lead	0.0013	mg/L	0.0010	1		01/06/17 11:21		
Vanadium	ND	mg/L	0.0050	1		01/06/17 11:21		
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EP	A 3005A			
Arsenic, Dissolved	1.2	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:37	7440-38-2	
Chromium, Dissolved	4.0	ug/L	1.0	1		01/03/17 15:37		
Lead, Dissolved	ND	ug/L	1.0	1		01/03/17 15:37		
Vanadium, Dissolved	ND	ug/L	5.0	1		01/03/17 15:37		
taridamin, prooffed	ND	<i></i> 09, <i></i>	5.0	'	12/00/10 00:00	0.00011 10.07	1 770 02-2	

CAS No.

12/28/16 18:29 67-64-1

12/28/16 18:29 71-43-2

12/28/16 18:29 75-27-4

Qual

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ANALYTICAL RESULTS

Project:

Mercury

Acetone

Benzene

Bromodichloromethane

Date: 01/12/2017 09:20 AM

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Sample: MW-83B2

Lab ID: 2047806003

Collected: 12/21/16 09:59

Parameters Results Units Report Limit 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

> ND ug/L 0.20 12/29/16 09:57 12/29/16 17:59 7439-97-6

Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury, Dissolved (LF) Mercury, Dissolved ND 0.20 12/29/16 11:58 12/29/16 19:33 7439-97-6 ug/L

8270 MSSV PAH by SIM SEP	Analytical Method: EPA 8270 by SIM	Preparatio	n Metho	d: EPA 3510
A	ND world	0.40		10/00/46 10:

20.7

ND

ND

ug/L

ug/L

ug/L

8270 MSSV PAH by SIM SEP	Analytical Metho	od: EPA 8270 by SIN	M Preparation	on Mel	thod: EPA 3510		
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	208-96-8
Anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	207-08-9
Chrysene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	53-70-3
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	206-44-0
Fluorene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	91-57-6
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	91-20-3
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	85-01-8
Pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	88	%.	25-150	1	12/28/16 10:04	01/06/17 20:34	321-60-8
Terphenyl-d14 (S)	57	%.	25-150	1	12/28/16 10:04	01/06/17 20:34	1718-51-0
8260 MSV Low Level	Analytical Meth	od: EPA 5030B/826	0				

Bromoform	ND	ug/L	0.50	1	12/28/16 18:29	75-25-2
Bromomethane	ND	ug/L	0.50	1	12/28/16 18:29	74-83-9
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 18:29	78-93-3
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 18:29	75-15-0
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 18:29	56-23-5
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 18:29	108-90-7
Chloroethane	ND	ug/L	0.50	1	12/28/16 18:29	75-00-3
Chloroform	ND	ug/L	0.50	1	12/28/16 18:29	67-66-3
Chloromethane	ND	ug/L	0.50	1	12/28/16 18:29	74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 18:29	96-12-8
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 18:29	124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 18:29	106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 18:29	75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 18:29	75-34-3
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 18:29	107-06-2

REPORT OF LABORATORY ANALYSIS

4.0

0.50

0.50

1

1

C9

L3



ANALYTICAL RESULTS

PUMA TERMINAL MW SAMPLING Project:

2047806 Pace Project No.:

Date: 01/12/2017 09:20 AM

Sample: MW-83B2 Lab ID: 2047806003 Collected: 12/21/16 09:59 Rece Prepare Parameters Results Units Report Limit DF AS No Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 12/28/16 18:29 75-35-4 ND 0.50 1,1-Dichloroethene ug/L ND 12/28/16 18:29 156-59-2 cis-1,2-Dichloroethene ug/L 1.0 1 ND 0.50 12/28/16 18:29 156-60-5 trans-1,2-Dichloroethene 1 ug/L 1,2-Dichloropropane ND 0.50 12/28/16 18:29 78-87-5 ug/L 1 ND 0.50 12/28/16 18:29 10061-01-5 cis-1,3-Dichloropropene ug/L trans-1,3-Dichloropropene ND 0.50 1 12/28/16 18:29 10061-02-6 ug/L Ethylbenzene ND 0.50 12/28/16 18:29 100-41-4 ug/L 2-Hexanone ND 1.0 12/28/16 18:29 591-78-6 ug/L Isopropylbenzene (Cumene) ND 1.0 12/28/16 18:29 98-82-8 ug/L 1 Methyl acetate ND ug/L 2.0 12/28/16 18:29 79-20-9 0.50 12/28/16 18:29 75-09-2 Methylene Chloride ND ug/L 4-Methyl-2-pentanone (MIBK) ND 12/28/16 18:29 108-10-1 ug/L 1.0 ND 0.50 12/28/16 18:29 1634-04-4 Methyl-terf-butyl ether ug/L Styrene ND ug/L 1.0 12/28/16 18:29 100-42-5 1,1,2,2-Tetrachloroethane ND 0.50 12/28/16 18:29 79-34-5 ug/L Tetrachloroethene ND 0.50 12/28/16 18:29 127-18-4 ug/L Toluene ND ug/L 0.50 1 12/28/16 18:29 108-88-3 1,1,1-Trichloroethane ND ug/L 0.5012/28/16 18:29 71-55-6 1,1,2-Trichloroethane ND ug/L 0.50 12/28/16 18:29 79-00-5 Trichloroethene ND ug/L 0.50 12/28/16 18:29 79-01-6 Trichlorofluoromethane ND ug/L 0.50 1 12/28/16 18:29 75-69-4 ND 12/28/16 18:29 75-01-4 Vinyl chloride ug/L 0.50 1 ND 12/28/16 18:29 179601-23-1 m&p-Xylene ug/L 2.0 1 o-Xylene 12/28/16 18:29 95-47-6 ND ug/L 1.0 1 Surrogates Dibromofluoromethane (S) 105 %. 72-126 1 12/28/16 18:29 1868-53-7 4-Bromofluorobenzene (S) 98 %. 68-124 1 12/28/16 18:29 460-00-4 Toluene-d8 (S) 101 %. 79-119 1 12/28/16 18:29 2037-26-5

Sample: MW-AD-4	Lab ID: 204	7806004	Collected: 12/21/1	6 10:5	6 Received: 12	2/22/16 13:15 N	Natrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration	Method: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	12/28/16 10:52	01/06/17 02:45		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 02:45		
Surrogates		_						
n-Pentacosane (S)	35	%.	16-137	1	12/28/16 10:52	01/06/17 02:45	629-99-2	
o-Terphenyl (S)	48	%.	10-121	1	12/28/16 10:52	01/06/17 02:45	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	110	ug/L	50.0	1		12/30/16 11:49		
Surrogates		•	44.440			10/00/10 11 10	400.00.4	
4-Bromofluorobenzene (S)	94	%.	44-148	1		12/30/16 11:49	460-00-4	

(504)469-0333



ANALYTICAL RESULTS

PUMA TERMINAL MW SAMPLING Project:

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-AD-4 Lab ID: 2047806004 Collected: 12/21/16 10:56 Rec Prepa Parameters Results Units Report Limit DE Qual 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 0.0028 0.0010 Arsenic mg/L 12/30/16 06:50 01/06/17 11:25 7440-38-2 Chromium NΩ 0.0010 1 mg/L 12/30/16 06:50 01/06/17 11:25 7440-47-3 ND 0.0010 12/30/16 06:50 01/06/17 11:25 7439-92-1 Lead mg/L 1 Vanadium ND 0.0050 12/30/16 06:50 01/06/17 11:25 7440-62-2 mg/L 1 Analytical Method: EPA 6020 Preparation Method: EPA 3005A 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved ND ug/L 1.0 12/30/16 06:50 01/03/17 15:41 7440-38-2 Chromium, Dissolved ND ug/L 1.0 1 12/30/16 06:50 01/03/17 15:41 7440-47-3 Lead, Dissolved ND ug/L 1.0 1 12/30/16 06:50 01/03/17 15:41 7439-92-1 Vanadium, Dissolved ND ug/L 5.0 1 12/30/16 06:50 01/03/17 15:41 7440-62-2 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470 ND Mercury ug/L 0.20 1 12/29/16 09:57 12/29/16 18:01 7439-97-6 Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury, Dissolved (LF) Mercury, Dissolved ND ug/L 0.20 12/29/16 11:58 12/29/16 19:35 7439-97-6 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene 0.13 ug/L 0.10 12/28/16 10:06 01/05/17 12:10 83-32-9 ND 12/28/16 10:06 01/05/17 12:10 208-96-8 Acenaphthylene ug/L 0.10 1 ND 0.10 12/28/16 10:06 01/05/17 12:10 120-12-7 Anthracene ug/L 1 Benzo(a)anthracene ND 0.10 12/28/16 10:06 01/05/17 12:10 56-55-3 ug/L 1 Benzo(a)pyrene ND ug/L 0.10 12/28/16 10:06 01/05/17 12:10 50-32-8 1 Benzo(b)fluoranthene ND 0.10 12/28/16 10:06 01/05/17 12:10 205-99-2 ug/L 1 Benzo(g,h,i)perylene ND 0.10 12/28/16 10:06 01/05/17 12:10 191-24-2 ug/L 1 Benzo(k)fluoranthene ND 0.10 12/28/16 10:06 01/05/17 12:10 207-08-9 ug/L 1 Chrysene ND ug/L 0.10 12/28/16 10:06 01/05/17 12:10 218-01-9 1 Dibenz(a,h)anthracene ND ug/L 0.10 1 12/28/16 10:06 01/05/17 12:10 53-70-3 Fluoranthene ND ug/L 0.10 1 12/28/16 10:06 01/05/17 12:10 206-44-0 0.17 0.10 Elugrene ug/L 1 12/28/16 10:06 01/05/17 12:10 86-73-7 12/28/16 10:06 01/05/17 12:10 Indeno(1,2,3-cd)pyrene ND 0.10 ug/L 1 2-Methylnaphthalene 0.20 ug/L 0.10 1 12/28/16 10:06 01/05/17 12:10 91-57-6 Naphthalene 0.92 ug/L 0.10 1 12/28/16 10:06 01/05/17 12:10 91-20-3 Phenanthrene ND ug/L 0.10 1 12/28/16 10:06 01/05/17 12:10 85-01-8 Pyrene ND ug/L 0.10 12/28/16 10:06 01/05/17 12:10 129-00-0 Surrogates 2-Fluorobiphenyl (S) 80 %. 25-150 1 12/28/16 10:06 01/05/17 12:10 321-60-8 Terphenyl-d14 (S) 74 %. 25-150 12/28/16 10:06 01/05/17 12:10 1718-51-0 1 Analytical Method: EPA 5030B/8260 8260 MSV Low Level Acetone 41.6 ug/L 4.0 1 12/28/16 18:47 67-64-1 C9ND 0.50 12/28/16 18:47 71-43-2 Benzene ug/L 1 0.50 Bromodichloromethane ND ug/L 1 12/28/16 18:47 75-27-4 ND 0.50 Bromoform 1 12/28/16 18:47 75-25-2 ug/L Bromomethane NΩ 0.50 12/28/16 18:47 74-83-9 1 ug/L 2-Butanone (MEK) ND ug/L 2.0 12/28/16 18:47 78-93-3 1



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Toluene-d8 (S)

Date: 01/12/2017 09:20 AM

2047806

Sample: MW-AD-4 Lab ID: 2047806004 Collected: 12/21/16 10:56 Received: DF **Parameters** Results Units Report Limit Prepared Analyzed CAS No. Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Carbon disulfide ND ug/L 1.0 12/28/16 18:47 75-15-0 L3 Carbon tetrachloride ND ug/L 0.50 1 12/28/16 18:47 56-23-5 Chlorobenzene ND ug/L 0.50 1 12/28/16 18:47 108-90-7 Chloroethane ND ug/L 0.50 1 12/28/16 18:47 75-00-3 Chloroform ND 0.50 ug/L 1 12/28/16 18:47 67-66-3 Chloromethane ND ug/L 0.50 1 12/28/16 18:47 74-87-3 1,2-Dibromo-3-chloropropane NΩ 0.201 12/28/16 18:47 96-12-8 ug/L Dibromochloromethane ND ug/L 0.50 1 12/28/16 18:47 124-48-1 12/28/16 18:47 106-93-4 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 Dichlorodifluoromethane ND 1.0 12/28/16 18:47 75-71-8 ug/L 1 1,1-Dichloroethane ND ug/L 12/28/16 18:47 75-34-3 0.50 1 1,2-Dichloroethane ND ug/L 0.50 12/28/16 18:47 107-06-2 1 1,1-Dichloroethene ND ug/L 0.50 12/28/16 18:47 75-35-4 1 cis-1,2-Dichloroethene ND 1.0 12/28/16 18:47 156-59-2 ug/L 1 trans-1,2-Dichloroethene ND ug/L 0.50 1 12/28/16 18:47 156-60-5 1,2-Dichloropropane ND ug/L 0.50 1 12/28/16 18:47 78-87-5 cis-1,3-Dichloropropene NΠ ug/L 0.50 1 12/28/16 18:47 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 1 12/28/16 18:47 10061-02-6 Ethylbenzene ND ug/L 0.50 1 12/28/16 18:47 100-41-4 2-Hexanone ND ug/L 1.0 1 12/28/16 18:47 591-78-6 Isopropylbenzene (Cumene) ND 1.0 12/28/16 18:47 98-82-8 ug/L Methyl acetate ND 2.0 12/28/16 18:47 79-20-9 ug/L 1 Methylene Chloride ND 0.50 12/28/16 18:47 75-09-2 ug/L 4-Methyl-2-pentanone (MIBK) ND 1.0 1 12/28/16 18:47 108-10-1 ug/L Methyl-tert-butyl ether 1.4 ug/L 0.50 1 12/28/16 18:47 1634-04-4 Styrene ND ug/L 1.0 12/28/16 18:47 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 1 12/28/16 18:47 79-34-5 12/28/16 18:47 127-18-4 Tetrachloroethene ND ug/L 0.50 1 Toluene 12/28/16 18:47 108-88-3 ND ug/L 0.50 1 1,1,1-Trichloroethane ND ug/L 0.50 1 12/28/16 18:47 71-55-6 1,1,2-Trichloroethane 0.50 12/28/16 18:47 79-00-5 1.9 ug/L 1 Trichloroethene ND 0.50 12/28/16 18:47 79-01-6 ug/L 1 Trichlorofluoromethane ND 0.50 1 12/28/16 18:47 75-69-4 ug/L Vinyl chloride ND ug/L 0.50 1 12/28/16 18:47 75-01-4 m&p-Xylene ND 12/28/16 18:47 179601-23-1 ug/L 2.0 1 o-Xylene ND 1 12/28/16 18:47 95-47-6 1.0 ug/L Surrogates 104 Dibromofluoromethane (S) %. 72-126 1 12/28/16 18:47 1868-53-7 4-Bromofluorobenzene (S) 98 %. 68-124 1 12/28/16 18:47 460-00-4

REPORT OF LABORATORY ANALYSIS

79-119

1

101

%.

12/28/16 18:47 2037-26-5

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4, Rose, LA 70087
4504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/12/2017 09:20 AM

2047806

Pace Project No.: 2047606	<u> </u>				1.41	42270	N/4/	
Sample: MW-33A	Lab ID: 204	7806005	Collected: 12/21/1	6 11:44	Received.	2/16 13;157	er	
Parameters	Results	Units	Report Limit	DF	Prepared	16 13 15 VA	AS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	į		
Diesel Range Organic (C10-C28)	0.64	mg/L	0.50	1	12/28/16 10:52	01/05/17 21:35		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 21:35		
Surrogates		•						
n-Pentacosane (S)	42	%.	16-137	1	12/28/16 10:52	01/05/17 21:35	629-99-2	
o-Terphenyl (S)	60	%.	10-121	1	12/28/16 10:52	01/05/17 21:35	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meti	nod: EPA 80	015/8021					
Gasoline Range Organics	383	ug/L	50.0	1		12/30/16 12:14		
Surrogates								
4-Bromofluorobenzene (S)	106	%.	44-148	1		12/30/16 12:14	460-00-4	
6020 MET ICPMS	Analytical Met	nod: EPA 60	020 Preparation Met	nod: EP/	4 3010			
Arsenic	0.013	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:29	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	_	020 Preparation Met	nod: EP/	A 3005A			
Arsenic. Dissolved	ND	ug/L	1.0	1	12/20/16 06:50	01/03/17 15:45	7440 29 2	
Chromium, Dissolved	ND	_	1.0	1		01/03/17 15:45		
•		ug/L						
Lead, Dissolved	ND	ug/L	1.0	1		01/03/17 15:45		
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:45	7440-02-2	
7470 Mercury	Analytical Met	nod: EPA 7	470 Preparation Met	nod: EP	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:07	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP/	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:37	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparat	ion Metł	nod: EPA 3510			
Acenaphthene	1.0	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	83-32-9	
Acenaphthylene	0.15	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/05/17 12:30		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/05/17 12:30		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/05/17 12:30		
Chrysene	ND	ug/L	0.10	1		01/05/17 12:30		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/05/17 12:30		
Fluoranthene	ND	ug/L	0.10	1		01/05/17 12:30		
Fluorene	0.25	ug/L ug/L	0.10	1		01/05/17 12:30		
Indeno(1,2,3-cd)pyrene	0.25 ND	ug/L ug/L	0.10	1		01/05/17 12:30		
2-Methylnaphthalene		-				01/05/17 12:30		
	ND	ug/L	0.10	1				
Naphthalene	1.5	ug/L	0.10	1		01/05/17 12:30		
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	გე-U I-გ	



ANALYTICAL RESULTS

Project:

Vinyl chloride

m&p-Xylene

Date: 01/12/2017 09:20 AM

PUMA TERMINAL MW SAMPLING

Sample: MW-33A	Lab ID:	2047806005	Collected:	12/21/1	6 11:44	Received, 12	122/4 58/160	atriv. Wa er	
Parameters	Results	Units	Repor	t Limit	DF	Prepared	Ana Med Y	No.	Qual
8270 MSSV PAH by SIM SEP	Analytical I	Method: EPA 8	270 by SIM I	Preparati	on Meth	nod: EPA 3510	ALCO, AICEO		
Pyrene	NE	ug/L		0.10	1	12/28/16 10:06	01/05/17 12:30	129-00-0	
Surrogates				DE 450		40/00/40 40 00	0410514740.00		
2-Fluorobiphenyl (S)	63			25-150	1		01/05/17 12:30		
Terphenyl-d14 (S)	60	%.		25-150	1	12/28/16 10:06	01/05/17 12:30	1718-51-0	
8260 MSV Low Level	Analytical I	Method: EPA 5	030B/8260						
Acetone	13.4	ug/L		4.0	1		12/28/16 19:05	67-64-1	C9
Benzene	NE) ug/L		0.50	1		12/28/16 19:05	71-43-2	
Bromodichloromethane	NE) ug/L		0.50	1		12/28/16 19:05	75-27-4	
Bromoform	NE	ug/L		0.50	1		12/28/16 19:05	75-25-2	
Bromomethane	NE) ug/L		0.50	1		12/28/16 19:05	74-83-9	
2-Butanone (MEK)	NE) ug/L		2.0	1		12/28/16 19:05	78-93-3	
Carbon disulfide	NE			1.0	1		12/28/16 19:05	75-15-0	L3
Carbon tetrachloride	NE) ug/L		0.50	1		12/28/16 19:05	56-23-5	
Chlorobenzene	NE	ug/L		0.50	1		12/28/16 19:05	108-90-7	
Chloroethane	NE	-		0.50	1		12/28/16 19:05	75-00-3	
Chloroform	NE			0.50	1		12/28/16 19:05	67-66-3	
Chloromethane	NE	=		0.50	1		12/28/16 19:05	74-87-3	
1.2-Dibromo-3-chloropropane	NE	_		0.20	1		12/28/16 19:05	96-12-8	
Dibromochloromethane	NE			0.50	1		12/28/16 19:05		
1,2-Dibromoethane (EDB)	NE			1.0	1		12/28/16 19:05	106-93-4	
Dichlorodifluoromethane	NE			1.0	1		12/28/16 19:05		
1,1-Dichloroethane	NE			0.50	1		12/28/16 19:05		
1,2-Dichloroethane	NE	=		0.50	1		12/28/16 19:05		
1,1-Dichloroethene	NE			0.50	1		12/28/16 19:05		
cis-1,2-Dichloroethene	NE	-		1.0	1		12/28/16 19:05		
trans-1,2-Dichloroethene	NE	-		0.50	1		12/28/16 19:05		
1,2-Dichloropropane	NE	-		0.50	1		12/28/16 19:05		
cis-1,3-Dichloropropene	NE			0.50	1		12/28/16 19:05		
trans-1,3-Dichloropropene	NE	J		0.50	1		12/28/16 19:05		
Ethylbenzene	NE	•		0.50	1		12/28/16 19:05		
2-Hexanone	NE	-		1.0	1		12/28/16 19:05		
Isopropylbenzene (Cumene)	NE	-		1.0	1		12/28/16 19:05		
Methyl acetate	. NE	9		2.0	1		12/28/16 19:05		
Methylene Chloride	NE	9		0.50	1		12/28/16 19:05		
4-Methyl-2-pentanone (MIBK)	NE	3		1.0	1		12/28/16 19:05		
Methyl-tert-butyl ether	8.4			0.50	1		12/28/16 19:05		
Styrene	NE	-		1.0	1		12/28/16 19:05		
1,1,2,2-Tetrachloroethane	NE NE			0.50	1		12/28/16 19:05		
Tetrachloroethene	NE			0.50	1		12/28/16 19:05		
Toluene	NE	-		0.50	1		12/28/16 19:05		
1,1,1-Trichloroethane		_			1		12/28/16 19:05		
	NE NE	•		0.50					
1,1,2-Trichloroethane	NE NE	•		0.50	1		12/28/16 19:05		
Trichlandly	NE	•		0.50	1		12/28/16 19:05		
Trichlorofluoromethane	NE	D ug/L		0.50	1		12/28/16 19:05	/5-69-4	

REPORT OF LABORATORY ANALYSIS

0.50

2.0

1

ND

ND

ug/L

ug/L

12/28/16 19:05 75-01-4

12/28/16 19:05 179601-23-1



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Date: 01/12/2017 09:20 AM

2047806

Pace Project No.: 2047806					1:31	#511	8 11	,
Sample: MW-33A	Lab ID: 2047	7806005	Collected: 12/21/1	16 11:44	Received: 12	2 16 13: 5X		
Parameters	Results	Units	Report Limit	DF	Prepared	246 13: (5X)	No.	Qual
8260 MSV Low Level	Analytical Meth	od: EPA 5	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		12/28/16 19:05	95-47-6	
Dibromofluoromethane (S)	102	%.	72-126	1		12/28/16 19:05	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		12/28/16 19:05	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		12/28/16 19:05	2037-26-5	
Sample: MW-P116	Lab ID: 204	7806006	Collected: 12/21/	16 14:05	Received: 12	/22/16 13:15 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	- — Analytical Meth	nod: EPA 8	015B Modified Prepa	aration M	lethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 22:03		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/05/17 22:03		
Surrogates	113	night.	1.0		12,20,10 10,02	0 1100/11 22.00		
n-Pentacosane (S)	31	%.	16-137	1	12/28/16 10:52	01/05/17 22:03	629-99-2	
o-Terphenyl (S)	48	%.	10-121	1	12/28/16 10:52	01/05/17 22:03	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 12:41		
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/30/16 12:41	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 6	020 Preparation Met	hod: EP	A 3010			
Arsenic	0.0017	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:33	7440-38-2	
Chromium	0.0011	mg/L	0.0010	1		01/06/17 11:33		
Lead	0.0010	mg/L	0.0010	1		01/06/17 11:33		
Vanadium	ND	mg/L	0.0050	1		01/06/17 11:33		
6020 MET ICPMS, Dissolved (LF)		_	020 Preparation Met	hod: EP	A 3005A			
, , ,	,		•			04/00/47 45 46	7440 00 0	
Arsenic, Dissolved	ND	ug/L	1.0	1		01/03/17 15:49		
Chromium, Dissolved	ND	ug/L	1.0	1		01/03/17 15:49		
Lead, Dissolved	ND	ug/L	1.0	1		01/03/17 15:49		
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:49	7440-62-2	
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Met	thod: EP		•		
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:09	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	'470 Preparation Me		A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:39	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	3270 by SIM Prepara	tion Met	hod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1		01/05/17 12:50		
Acenaphthylene	ND	ug/L	0.10			01/05/17 12:50		
Anthracene	ND	ug/L	0.10	1		01/05/17 12:50		
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	56-55-3	



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: Sample: MW-P116

Methylene Chloride

Date: 01/12/2017 09:20 AM

2047806

Lab ID: 2047806006

Collected: 12/21/16 14:05

Received

Parameters	Results	Units	Report Limit	ÐF	Prepared	was run	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 827	0 by SIM Preparati	on Met	thod: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	129-00-0	
Surrogates		-						
2-Fluorobiphenyl (S)	76	%.	25-150	1	12/28/16 10:06	01/05/17 12:50	321-60-8	
Terphenyl-d14 (S)	75	%.	25-150	1	12/28/16 10:06	01/05/17 12:50	1718-51-0	
8260 MSV Low Level	Analytical Met	hod: EPA 503	30B/8260					
Acetone	14.9	ug/L	4.0	1		12/28/16 19:23	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 19:23	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 19:23	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 19:23	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 19:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 19:23	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 19:23	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 19:23	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 19:23	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 19:23	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 19:23	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 19:23	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 19:23	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 19:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 19:23	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 19:23	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 19:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 19:23		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:23		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:23		
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 19:23		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 19:23		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 19:23		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 19:23		
		-9				10,000,000	75.00.0	

REPORT OF LABORATORY ANALYSIS

0.50

ND

ug/L

12/28/16 19:23 75-09-2

1000 Riverbend Blvd - Suite F St. Rose, LA 70087

(504)469-0333



ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-P116 Lab ID: 2047806006 Collected: 12/21/16 14:05 Received Parameters Results Units DF Prepared Qual Report Limit Analytical Method: EPA 5030B/8260 8260 MSV Low Level ug/L 4-Methyl-2-pentanone (MiBK) ND 1.0 12/28/16 19:23 108-10-1 Methyl-tert-butyl ether ND ug/L 0.50 12/28/16 19:23 1634-04-4 ug/L 12/28/16 19:23 100-42-5 Styrene ND 1.0 1 1,1,2,2-Tetrachloroethane ND 0.50 ug/L 12/28/16 19:23 79-34-5 1 Tetrachloroethene ND ug/L 0.50 12/28/16 19:23 127-18-4 1 Toluene ND 0.50 12/28/16 19:23 108-88-3 ug/L 1 1,1,1-Trichloroethane ND ug/L 0.50 12/28/16 19:23 71-55-6 1,1,2-Trichloroethane ND 0.50 ug/L 12/28/16 19:23 79-00-5 ND 0.50 12/28/16 19:23 79-01-6 Trichloroethene ug/L 1 Trichlorofluoromethane ND ug/L 0.50 1 12/28/16 19:23 75-69-4 Vinyl chloride ND ug/L 0.50 1 12/28/16 19:23 75-01-4 12/28/16 19:23 179601-23-1 m&p-Xylene ND ug/L 2.0 1 o-Xylene 12/28/16 19:23 95-47-6 ND ug/L 1.0 1 Surrogates 105 12/28/16 19:23 1868-53-7 %. 72-126 1 Dibromofluoromethane (S) 68-124 12/28/16 19:23 460-00-4 4-Bromofluorobenzene (S) 97 %. 1 Toluene-d8 (S) 102 %. 79-119 12/28/16 19:23 2037-26-5 1

Sample: MW-P117	Lab ID: 204	7806007	Collected: 12/21/1	6 15:2	1 Received: 12	/22/16 13:15 M	1atrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 80	015B Modified Prepai	ration	Method: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 22:32		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 22:32		
n-Pentacosane (S)	32	%.	16-137	1	12/28/16 10:52	01/05/17 22:32	629-99-2	
o-Terphenyl (S)	39	%.	10-121	1	12/28/16 10:52	01/05/17 22:32	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 13:07		
4-Bromofluorobenzene (S)	93	%.	44-148	1		12/30/16 13:07	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 60	020 Preparation Meth	od: El	PA 3010			
Arsenic	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:45	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:45	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:45	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:45	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	020 Preparation Meth	od: E	PA 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:53	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:53	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:53	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:53	7440-62-2	

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-P117

Lab ID: 2047806007

Collected: 12/21/16 15:21

Parameters	Results	Units	Report Limit	DF	Prepared		AS No.	Qual
7470 Mercury	Analytical Meth	nod: EPA 747	0 Preparation Met	nod: EF	PA 7470	CO CACA		
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:11	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 747	0 Preparation Met	hod: EF	PA 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:41	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 827	0 by SIM Preparat	ion Me	thod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1		01/05/17 13:10		
Acenaphthylene	ND	ug/L	0.10	1		01/05/17 13:10		
Anthracene	ND	ug/L	0.10	1		01/05/17 13:10		
Benzo(a)anthracene	ND	ug/L	0.10	1		01/05/17 13:10		
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	75	%.	25-150	1	12/28/16 10:06	01/05/17 13:10	321-60-8	
Terphenyl-d14 (S)	69	%.	25-150	1	12/28/16 10:06	01/05/17 13:10	1718-51-0	
8260 MSV Low Level	Analytical Meti	hod: EPA 503	30B/8260					
Acetone	16.4	ug/L	4.0	1		12/28/16 19:41	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 19:41	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 19:41	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 19:41	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 19:41		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 19:41		
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 19:41		L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 19:41		
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 19:41		
Chloroethane	ND	ug/L	0.50	1		12/28/16 19:41		
Chloroform	ND	ug/L	0.50	1		12/28/16 19:41		
Chloromethane	ND	ug/L	0.50	1		12/28/16 19:41		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 19:41		
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 19:41		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 19:41		
Dichlorodifluoromethane	ND	ug/L ug/L	1.0	1		12/28/16 19:41		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:41		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:41		
1,2-Diditiologularie	NU	ugr	0.50	1		12/20/10 13:41	101-00-2	



ANALYTICAL RESULTS

Project:

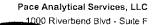
PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/12/2017 09:20 AM

2047806

Pace Project No.: 2047606					
Sample: MW-P117	Lab ID: 204	7806007	Collected: 12/21/1	6 15:21	Rel de et : 12/23/24 H > Martin Water
Parameters	Results	Units	Report Limit	DF	Preparation (AS No. Qual
B260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260		Sign Lines
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:41 75-35-4
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 19:41 156-59-2
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:41 156-60-5
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 19:41 78-87-5
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:41 10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:41 10061-02-6
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 19:41 100-41-4
2-Hexanone	ND	ug/L	1.0	1	12/28/16 19:41 591-78-6
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 19:41 98-82-8
Methyl acetate	ND	ug/L	2.0	1	12/28/16 19:41 79-20-9
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 19:41 75-09-2
	ND		1.0	1	12/28/16 19:41 108-10-1
4-Methyl-2-pentanone (MIBK)	1.5	ug/L	0.50	1	12/28/16 19:41 1634-04-4
Methyl-tert-butyl ether		ug/L		1	12/28/16 19:41 100-42-5
Styrene	ND	ug/L	1.0		12/28/16 19:41 79-34-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	
Tetrachioroethene	ND	ug/L	0.50	1	12/28/16 19:41 127-18-4
Toluene	ND	ug/L	0.50	1	12/28/16 19:41 108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:41 71-55-6
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:41 79-00-5
Trichloroethene	ND	ug/L	0.50	1	12/28/16 19:41 79-01-6
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 19:41 75-69-4
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 19:41 75-01-4
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 19:41 179601-23-1
o-Xylene	ND	ug/L	1.0	1	12/28/16 19:41 95-47-6
Surrogates					
Dibromofluoromethane (S)	103	%.	72-126	1	12/28/16 19:41 1868-53-7
4-Bromofluorobenzene (S)	101	%.	68-124	1	12/28/16 19:41 460-00-4
Toluene-d8 (S)	99	%.	79-119	1	12/28/16 19:41 2037-26-5
Sample: MW-65A	Lab ID: 204	7806008	Collected: 12/21/	16 16:07	Received: 12/22/16 13:15 Matrix: Water
Parameters	Results	Units	Report Limit	DF	Prepared Analyzed CAS No. Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	aration M	Method: EPA 3535
_	,		·		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52 01/05/17 23:00
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52 01/05/17 23:00
Surrogates (S)	<i></i>	0/	40 407	4	42/09/46 40:52 04/05/47 22:00 620 00 2
n-Pentacosane (S)	54	%.	16-137	1	12/28/16 10:52 01/05/17 23:00 629-99-2
o-Terphenyl (S)	55	%.	10-121	1	12/28/16 10:52 01/05/17 23:00 84-15-1
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021		
Gasoline Range Organics	ND	ug/L	50.0	1	12/30/16 13:33
Surrogates					
4-Bromofluorobenzene (S)	93	%.	44-148	1	12/30/16 13:33 460-00-4



st. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-65A Lab ID: 2047806008 Collected: 12/21/16 16:07 Received: Parameters Results Units Report Limit Prepared Qual 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 Arsenic 0.0013 mg/L 0.0010 12/30/16 06:50 01/06/17 11:49 7440-38-2 Chromium 0.0012 0.0010 mg/L 12/30/16 06:50 01/06/17 11:49 7440-47-3 Lead ND 0.0010 mg/L 12/30/16 06:50 01/06/17 11:49 7439-92-1 Vanadium ND 0.0050 12/30/16 06:50 01/06/17 11:49 mg/L 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND 1.0 12/30/16 06:50 01/03/17 15:57 7440-38-2 ug/L Chromium, Dissolved ND 1.0 12/30/16 06:50 01/03/17 15:57 ug/L 7440-47-3 Lead, Dissolved ND ug/L 1.0 12/30/16 06:50 01/03/17 15:57 7439-92-1 Vanadium, Dissolved 12/30/16 06:50 01/03/17 15:57 7440-62-2 ND ug/L 5.0 1 Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury Mercury ND 0.20 12/29/16 09:37 12/29/16 16:30 7439-97-6 ug/L 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury, Dissolved ND ug/L 0.20 12/29/16 11:58 12/29/16 18:24 7439-97-6 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene ND 0.10 ug/L 12/28/16 10:06 01/05/17 13:30 83-32-9 Acenaphthylene ND ug/L 0.10 1 12/28/16 10:06 01/05/17 13:30 208-96-8 12/28/16 10:06 01/05/17 13:30 120-12-7 Anthracene ND 0.10 ug/L 1 Benzo(a)anthracene ND 0.10 12/28/16 10:06 01/05/17 13:30 56-55-3 ug/L Benzo(a)pyrene ND 0.10 12/28/16 10:06 01/05/17 13:30 50-32-8 ug/L 1 Benzo(b)fluoranthene ND 0.10 12/28/16 10:06 01/05/17 13:30 205-99-2 ug/L 1 Benzo(g,h,i)perylene ND ua/L 0.10 1 12/28/16 10:06 01/05/17 13:30 191-24-2 Benzo(k)fluoranthene ND 0.10 1 12/28/16 10:06 01/05/17 13:30 207-08-9 ua/L Chrysene ND ug/L 0.10 1 12/28/16 10:06 01/05/17 13:30 218-01-9 Dibenz(a,h)anthracene ND ug/L 0.10 1 12/28/16 10:06 01/05/17 13:30 53-70-3 Fluoranthene ND ug/L 0.10 1 12/28/16 10:06 01/05/17 13:30 206-44-0 Fluorene ND ug/L 0.10 1 12/28/16 10:06 01/05/17 13:30 86-73-7 Indeno(1,2,3-cd)pyrene ND 0.10 12/28/16 10:06 01/05/17 13:30 193-39-5 ug/L 1 2-Methylnaphthalene ND 0.10 1 12/28/16 10:06 01/05/17 13:30 91-57-6 ug/L Naphthalene ND 0.10 1 12/28/16 10:06 01/05/17 13:30 91-20-3 ug/L Phenanthrene ND ug/L 0.10 1 12/28/16 10:06 01/05/17 13:30 85-01-8 Pyrene ND 1 12/28/16 10:06 01/05/17 13:30 129-00-0 ug/L 0.10 Surrogates 2-Fluorobiphenyl (S) 84 %. 25-150 1 12/28/16 10:06 01/05/17 13:30 321-60-8 Terphenyl-d14 (S) 82 %. 25-150 1 12/28/16 10:06 01/05/17 13:30 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 18.0 12/28/16 19:58 67-64-1 uo/L 4.0 1 C9 Benzene ND 0.50 1 12/28/16 19:58 71-43-2 ug/L Bromodichloromethane ND ug/L 0.50 1 12/28/16 19:58 75-27-4 Bromoform ND ua/L 0.50 1 12/28/16 19:58 75-25-2 Bromomethane ND 0.50 1 12/28/16 19:58 74-83-9 ua/L 2-Butanone (MEK) ND ug/L 2.0 12/28/16 19:58 78-93-3

(504)469-0333



ANALYTICAL RESULTS

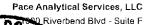
Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: MW-65A Lab ID: 2047806008 Collected: 12/21/16 16:07

Sample: MW-65A	Lab ID: 204	7806008	Collected: 12/21/1	6 16:07	Received 12/22/15 18 ft of Matrix Water	
Parameters	Results	Units	Report Limit	DF	Prepar No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260		O LICENT	
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 19:58 75-15-0 L3	
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 19:58 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 19:58 108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 19:58 75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 19:58 67-66-3	
Chloromethane	ND	ug/L	0.50	1	12/28/16 19:58 74-87-3	
1,2-Dibromo-3-chloropropane	ПИ	ug/L	0.20	1	12/28/16 19:58 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 19:58 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 19:58 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 19:58 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 19:58 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 19:58 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:58 75-35-4	
cis-1,2-Dichloraethene	ND	ug/L	1.0	1	12/28/16 19:58 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:58 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 19:58 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:58 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:58 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 19:58 100-41-4	
2-Hexanone	ND	ug/L	1.0	1	12/28/16 19:58 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 19:58 98-82-8	
Methyl acetate	ND	ug/L	2.0	1	12/28/16 19:58 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 19:58 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 19:58 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	12/28/16 19:58 1634-04-4	
Styrene	ND	ug/L	1.0	1	12/28/16 19:58 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 19:58 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 19:58 127-18-4	
Toluene	ND	ug/L	0.50	1	12/28/16 19:58 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:58 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:58 79-00-5	
Trichloroethene	ND	ug/L	0.50	1	12/28/16 19:58 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 19:58 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 19:58 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 19:58 179601-23-1	
o-Xylene	ND	ug/L	1.0	1	12/28/16 19:58 95-47-6	
Surrogates		=				
Dibromofluoromethane (S)	106	%.	72-126	1	12/28/16 19:58 1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1	12/28/16 19:58 460-00-4	
Toluene-d8 (S)	99	%.	79-119	1	12/28/16 19:58 2037-26-5	



St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

PUMA TERMINAL MW SAMPLING Project:

Pace Project No.: 2047806

o-Xylene

Date: 01/12/2017 09:20 AM

Sample: FB-122116 Lab ID: 2047806009 Collected: 12/21/16 16:15 Received: Parameters Results Units Report Limit DF Prepared Analyzeo ·CAS No. Qual 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 ND 1 Gasoline Range Organics ug/L 50.0 12/30/16 13:59 Surrogates 4-Bromofluorobenzene (S) 92 %. 44-148 1 12/30/16 13:59 460-00-4 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 19.4 4.0 12/28/16 20:16 67-64-1 C9 ug/L 1 ND 0.50 12/28/16 20:16 71-43-2 Benzene ug/L 1 Bromodichloromethane ND 0.50 12/28/16 20:16 75-27-4 ug/L 1 Bromoform ND 0.50 12/28/16 20:16 75-25-2 ug/L 1 ug/L Bromomethane ND 0.50 1 12/28/16 20:16 74-83-9 ug/L 2-Butanone (MEK) ND 2.0 12/28/16 20:16 78-93-3 1 ug/L Carbon disulfide ND 1.0 1 12/28/16 20:16 75-15-0 13 12/28/16 20:16 56-23-5 Carbon tetrachloride ND ug/L 0.50 1 Chlorobenzene ND ug/L 0.50 1 12/28/16 20:16 108-90-7 Chloroethane ND 0.50 12/28/16 20:16 75-00-3 ug/L 1 Chloroform ND 0.50 12/28/16 20:16 67-66-3 ug/L 1 Chloromethane ND ug/L 0.50 1 12/28/16 20:16 74-87-3 1,2-Dibromo-3-chloropropane ND 0.20 12/28/16 20:16 96-12-8 ug/L 1 Dibromochloromethane ND 0.50 1 12/28/16 20:16 124-48-1 ug/L 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 20:16 106-93-4 Dichlorodifluoromethane ND 1.0 1 12/28/16 20:16 75-71-8 ug/L ug/L 1,1-Dichloroethane NΩ 0.50 1 12/28/16 20:16 75-34-3 12/28/16 20:16 107-06-2 1,2-Dichloroethane ND ug/L 0.50 1 1,1-Dichloroethene ND ug/L 0.50 1 12/28/16 20:16 75-35-4 cis-1,2-Dichloroethene ND 12/28/16 20:16 156-59-2 ug/L 1.0 1 trans-1,2-Dichloroethene ND 0.50 12/28/16 20:16 156-60-5 ug/L 1 1,2-Dichloropropane ND 0.50 12/28/16 20:16 78-87-5 ug/L 1 0.50 12/28/16 20:16 10061-01-5 cis-1,3-Dichloropropene ND ug/L 1 trans-1,3-Dichloropropene ND 0.50 1 12/28/16 20:16 10061-02-6 ua/L 12/28/16 20:16 100-41-4 Ethylbenzene ND 0.50 1 ug/L 12/28/16 20:16 591-78-6 2-Hexanone ND 1.0 1 ug/L Isopropylbenzene (Cumene) ND 1.0 12/28/16 20:16 98-82-8 ug/L 1 Methyl acetate ND 2.0 1 12/28/16 20:16 79-20-9 ug/L Methylene Chloride ND 0.50 12/28/16 20:16 75-09-2 ug/L 1 4-Methyl-2-pentanone (MIBK) ND 1.0 12/28/16 20:16 108-10-1 ug/L 1 Methyl-tert-butyl ether ND 0.50 12/28/16 20:16 1634-04-4 ug/L 1 Styrene ND ug/L 1.0 1 12/28/16 20:16 100-42-5 1,1,2,2-Tetrachloroethane ND ua/L 0.50 1 12/28/16 20:16 79-34-5 Tetrachloroethene ND ua/L 0.50 1 12/28/16 20:16 127-18-4 12/28/16 20:16 108-88-3 Toluene ND ug/L 0.50 1 1,1,1-Trichloroethane ND 0.50 12/28/16 20:16 71-55-6 ug/L 1 1,1,2-Trichloroethane ND 0.50 12/28/16 20:16 79-00-5 ug/L 1 Trichloroethene ND ug/L 0.50 1 12/28/16 20:16 79-01-6 Trichlorofluoromethane ND 0.50 1 12/28/16 20:16 75-69-4 ug/L Vinyl chloride ND 0.50 1 12/28/16 20:16 75-01-4 ug/L m&p-Xylene ND 2.0 12/28/16 20:16 179601-23-1 ua/L

REPORT OF LABORATORY ANALYSIS

ND

ug/L

1.0

12/28/16 20:16 95-47-6

1000 Riverbend Blvd - Suite F St. Rose, LA 70087

(504)469-0333



4-Methyl-2-pentanone (MIBK)

Methyl-tert-butyl ether

Date: 01/12/2017 09:20 AM

ANALYTICAL RESULTS

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PUMA TERMINAL MW SAMPLING

	NAL MW SAMPLING				風	MERION	/8/	
					121	#3110		
Sample: FB-122116	Lab ID: 2047	7806009	Collected: 12/21/16	16:15	Receiv o.	(22/19/12/19/00)	ater ater	
Parameters	Results	Units	Report Limit	DF	Prepared	the view	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
Surrogates								
Dibromofluoromethane (S)	104	%.	72-126	1		12/28/16 20:16	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/28/16 20:16	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		12/28/16 20:16	2037-26-5	
Sample: TB-122216	Lab ID: 204	7806010	Collected: 12/22/16	00:00	Received: 12	2/22/16 13:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 8						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 14:25	i	
Surrogates 4-Bromofluorobenzene (S)	91	%.	44-148	1		12/30/16 14:25	460-00-4	
8260 MSV Low Level	Analytical Meth			·		12.00/10 11.22		
Acetone	62.0	ug/L	4.0	1		12/28/16 20:34	67.64.1	C9
Benzene	ND	ug/L ug/L	0.50	1		12/28/16 20:34		Ca
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 20:34		
Bromoform	ND ND	ug/L ug/L	0.50	1		12/28/16 20:34		
Bromomethane	ND ND	ug/L	0.50	1		12/28/16 20:34		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 20:34		
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 20:34		L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 20:34		LO
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 20:34		
Chloroethane	ND	ug/L	0.50	1		12/28/16 20:34		
Chloroform	ND	ug/L	0.50	1		12/28/16 20:34		
Chloromethane	0.64	ug/L	0.50	1		12/28/16 20:34		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 20:34		
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 20:34		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 20:34		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 20:34		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:34		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:34		
1.1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:34		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 20:34		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:34		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 20:34		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:34		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:34		
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 20:34		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 20:34		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 20:34		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 20:3		
Methylene Chloride	ND	ug/L	0.50	1	•	12/28/16 20:34		
4 Mathyl 2 postanona (MIDIX)	ND	ug/L	0.50	4		12/20/10 20.3		

REPORT OF LABORATORY ANALYSIS

1.0

0.50

ND

ND

ug/L

ug/L

12/28/16 20:34 108-10-1

12/28/16 20:34 1634-04-4

(504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/12/2017 09:20 AM

2047806

Sample: TB-122216 Lab ID: 2047806010 Collected: 12/22/16 00:00 Parameters Results Units Report Limit DF AS No Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Styrene ND ug/L 1.0 1 12/28/16 20:34 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 1 12/28/16 20:34 79-34-5 Tetrachloroethene ND ug/L 0.50 1 12/28/16 20:34 127-18-4 Toluene ND ug/L 0.50 1 12/28/16 20:34 108-88-3 12/28/16 20:34 71-55-6 1,1,1-Trichloroethane ND ug/L 0.50 1 1,1,2-Trichloroethane 12/28/16 20:34 79-00-5 ND ug/L 0.50 1 Trichloroethene 12/28/16 20:34 79-01-6 ND ug/L 0.50 1 Trichlorofluoromethane ND ug/L 0.50 1 12/28/16 20:34 75-69-4 Vinyl chloride 12/28/16 20:34 75-01-4 ND ug/L 0.50 1 m&p-Xylene 12/28/16 20:34 179601-23-1 ND ug/L 2.0 1 12/28/16 20:34 95-47-6 o-Xylene ND ug/L 1.0 1 Surrogates %. 12/28/16 20:34 1868-53-7 Dibromofluoromethane (S) 104 72-126 68-124 4-Bromofluorobenzene (S) 100 %. 12/28/16 20:34 460-00-4 Toluene-d8 (S) 101 %. 79-119 12/28/16 20:34 2037-26-5 Sample: EB-122216 Lab ID: 2047806011 Collected: 12/22/16 08:42 Received: 12/22/16 13:15 Matrix: Water Parameters Results CAS No. Units Report Limit Prepared Analyzed Qual 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 1 12/28/16 10:52 01/05/17 23:28 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 12/28/16 10:52 01/05/17 23:28 Surrogates %. n-Pentacosane (S) 42 12/28/16 10:52 01/05/17 23:28 629-99-2 16-137 1 o-Terphenyl (S) 49 %. 10-121 12/28/16 10:52 01/05/17 23:28 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 12/30/16 14:51 Surrogates 4-Bromofluorobenzene (S) 89 %. 44-148 12/30/16 14:51 460-00-4 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 Arsenic ND mg/L 0.0010 12/30/16 06:50 01/06/17 11:53 7440-38-2 Chromium ND mg/L 0.0010 12/30/16 06:50 01/06/17 11:53 7440-47-3 Lead ND mg/L 0.0010 12/30/16 06:50 01/06/17 11:53 7439-92-1 0.0050 12/30/16 06:50 01/06/17 11:53 7440-62-2 Vanadium ND mg/L 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND ug/L 1.0 12/30/16 06:50 01/03/17 16:09 7440-38-2 1 Chromium, Dissolved ND ug/L 1.0 1 12/30/16 06:50 01/03/17 16:09 7440-47-3 Lead, Dissolved ND ug/L 1.0 1 12/30/16 06:50 01/03/17 16:09 7439-92-1 Vanadium, Dissolved ND 12/30/16 06:50 01/03/17 16:09 7440-62-2 ug/L 5.0



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Sample: EB-122216

Date: 01/12/2017 09:20 AM

Lab ID: 2047806011

Collected: 12/22/16 08:42

Parameters	Results	Units	Report Limit	DF	Prepared	Winaulti	CAS No.	Qual
7470 Mercury	Analytical Meth	od: EPA 747	0 Preparation Meth	od: EF	PA 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:32 7	439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 747	0 Preparation Meth	od: EP	PA 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:26 7	439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 827	0 by SIM Preparati	on Met	hod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 8	3-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 2	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 1	20-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 5	6-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 5	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 2	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 1	91-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 2	207-08-9	
Chrysene	ND	ug/L	0.10	1		01/06/17 15:15 2		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 5	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 2	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 8	36-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 1	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 9	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 9	91-20-3	
Phenanthrene	ПИ	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 8	35-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15 1	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	71	%.	25-150	1		01/06/17 15:15		
Terphenyl-d14 (S)	66	%.	25-150	1	12/28/16 11:52	01/06/17 15:15	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 503	30B/8260					
Acetone	28.2	ug/L	4.0	1		12/28/16 20:52 6	67-64-1	. C9
Benzene	ND	ug/L	0.50	1		12/28/16 20:52	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 20:52	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 20:52	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 20:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 20:52		
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 20:52	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 20:52	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 20:52	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 20:52	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 20:52	67-66-3	
Chloromethane	0.65	ug/L	0.50	1		12/28/16 20:52	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 20:52	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 20:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 20:52	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 20:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:52	107-06-2	



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

4-Bromofluorobenzene (S)

Date: 01/12/2017 09:20 AM

2047806

Sample: EB-122216	Lab ID: 204	7806011	Collected: 12/22/1	6 08:42	Receivad R	/22/16 / 16 AN	hip Water	
Parameters	Results	Units	Report Limit	DF	Prepared	in the	AS No.	Qual
8260 MSV Low Level	Analytical Meti	hod: EPA 50	030B/8260		-			
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 20:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:52	156-60-5	
1,2-Dichloropropane	· ND	ug/L	0.50	1		12/28/16 20:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:52	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 20:52	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 20:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 20:52	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 20:52		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 20:52		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 20:52		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 20:52		
Styrene	ND	ug/L	1.0	1		12/28/16 20:52		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 20:52		
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 20:52		
Toluene	ND	ug/L	0.50	1		12/28/16 20:52		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:52		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:52		
Trichloroethene	ND	ug/L	0.50	1		12/28/16 20:52		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 20:52		
Vinyl chloride	ND ND	ug/L	0.50	1		12/28/16 20:52		
•	ND	_	2.0	1		12/28/16 20:52		
m&p-Xylene o-Xylene	ND ND	ug/L	1.0	1		12/28/16 20:52		
Surrogates	ND	ug/L	1.0	1		12/20/10 20:32	30-47-0	
Dibromofluoromethane (S)	105	%.	72-126	1		12/28/16 20:52	1868-53-7	
4-Bromofluorobenzene (S)	95	%.	68-124	1		12/28/16 20:52		
Toluene-d8 (S)	101	%.	79-119	1		12/28/16 20:52		
Sample: MW-15A	Lab ID: 204	7806012	Collected: 12/22/	16 09·38	Received: 12	1/22/16 13:15 M	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	aration M	lethod: EPA 3535	-		
u				4			•	
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1		01/05/17 23:56 01/05/17 23:56		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0		Ÿ			
n-Pentacosane (S)	35	%.	16-137	1		01/05/17 23:56		
o-Terphenyl (S)	44	%.	10-121	1	12/28/16 10:52	01/05/17 23:56	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 15:17	•	
4 December and (C)	0.4	0/	44.440	4		40/00/46 45:43	460.00.4	

REPORT OF LABORATORY ANALYSIS

44-148

94

12/30/16 15:17 460-00-4

(504)469-0333

St. Rose, LA 70087



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-15A	Lab ID: 204	7806012	Collected:	12/22/1	6 09:38	Received: 10	2 V16 13 15	a Wayer Wayer	/
Parameters	Results	Units	Repo	rt Limit	DF	Prepared	Physical Park	UKS)	Qual
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Prepara	ation Meth	od: EPA	3010	ACO AL	CENT	
Arsenic	0.0016	mg/L		0.0010	1	12/30/16 06:50	01/06/17 11:57	7440-38-2	
Chromium	ND	mg/L	1	0.0010	1	12/30/16 06:50	01/06/17 11:57	7440-47-3	
Lead	ND	mg/L		0.0010	1	12/30/16 06:50	01/06/17 11:57	7439-92-1	
Vanadium	ND	mg/L		0.0050	1	12/30/16 06:50	01/06/17 11:57	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Prepara	ation Meth	od: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L		1.0	1	12/30/16 06:50	01/03/17 16:13	7440-38-2	
Chromium, Dissolved	ND	ug/L		1.0	1	12/30/16 06:50	01/03/17 16:13	7440-47-3	
Lead, Dissolved	ND	ug/L		1.0	1	12/30/16 06:50	01/03/17 16:13	7439-92-1	
Vanadium, Dissolved	ND	ug/L		5.0	1	12/30/16 06:50	01/03/17 16:13	7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 7	470 Prepara	ation Meth	od: EPA	A 7470			
Mercury	ND	ug/L		0.20	1	12/29/16 09:37	12/29/16 16:34	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Prepara	ation Meth	nod: EP/	A 7470			
Mercury, Dissolved	ND	ug/L		0.20	1	12/29/16 11:58	12/29/16 18:32	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM	Preparati	on Meth	nod: EPA 3510			
Acenaphthene	ND	ug/L		0.10	1	12/28/16 11:52	01/06/17 15:35	83-32-9	
Acenaphthylene	ND	ug/L		0.10	1	12/28/16 11:52	01/06/17 15:35	208-96-8	
Anthracene	МD	ug/L		0.10	1	12/28/16 11:52	01/06/17 15:35	120-12-7	
Benzo(a)anthracene	ND	ug/L		0.10	1	12/28/16 11:52	01/06/17 15:35	56-55-3	
Benzo(a)pyrene	ND	ug/L		0.10	1	12/28/16 11:52	01/06/17 15:35	50-32-8	
Benzo(b)fluoranthene	ND	ug/L		0.10	1		01/06/17 15:35		
Benzo(g,h,i)perylene	ND	ug/L		0.10	1	12/28/16 11:52	01/06/17 15:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/L		0.10	1	12/28/16 11:52	01/06/17 15:35	207-08-9	
Chrysene	ND	ug/L		0.10	1		01/06/17 15:35		
Dibenz(a,h)anthracene	ND	ug/L		0.10	1		01/06/17 15:35		
Fluoranthene	ND	ug/L		0.10	1		01/06/17 15:35		
Fluorene	ND	ug/L		0.10	1		01/06/17 15:35		
Indeno(1,2,3-cd)pyrene	ND	ug/L		0.10	1		01/06/17 15:35		
2-Methylnaphthalene	ND	ug/L		0.10	1		01/06/17 15:35		
Naphthalene	ND	ug/L		0.10	1		01/06/17 15:35		
Phenanthrene	ND	ug/L		0.10	1		01/06/17 15:35		
Pyrene	ND	ug/L		0.10	1	12/28/16 11:52	01/06/17 15:35	129-00-0	
Surrogates	66	%.		25-150	1	10/00/46 11:50	01/06/17 15:35	224 60 0	
2-Fluorobiphenyl (S) Terphenyl-d14 (S)	51	%. %.		25-150	1		01/06/17 15:35		
8260 MSV Low Level	Analytical Met		0308/8260	20 100		12/20/10 11:02	0 17007 17 10:00	11 10 01 0	
	-		2302.0200	4.0	4		12/28/16 21:10	67-64-4	C9
Acetone Benzene	12.1	ug/L			1 1		12/28/16 21:10		C S
Bromodichloromethane	ND	ug/L		0.50					
	ND	ug/L		0.50	1		12/28/16 21:10 12/28/16 21:10		
Bromoform	ND	ug/L		0.50	1		12/28/16 21:10		
Bromomethane	ND ND	ug/L		0.50 2.0	1 1		12/28/16 21:10		
2-Butanone (MEK)	NU	ug/L		2.0	1		12/20/10 21:10	10-33-3	

12/28/16 21:10 79-20-9

12/28/16 21:10 75-09-2

12/28/16 21:10 108-10-1

12/28/16 21:10 1634-04-4

12/28/16 21:10 100-42-5

12/28/16 21:10 79-34-5

12/28/16 21:10 127-18-4

12/28/16 21:10 108-88-3

12/28/16 21:10 71-55-6

12/28/16 21:10 79-00-5

12/28/16 21:10 79-01-6

12/28/16 21:10 75-69-4

12/28/16 21:10 75-01-4

12/28/16 21:10 95-47-6

12/28/16 21:10 1868-53-7

12/28/16 21:10 460-00-4

12/28/16 21:10 2037-26-5

12/28/16 21:10 179601-23-1



ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Methyl acetate

Styrene

Toluene

Methylene Chloride

Tetrachloroethene

1,1,1-Trichloroethane

1,1,2-Trichloroethane

Trichlorofluoromethane

Dibromofluoromethane (S)

4-Bromofluorobenzene (S)

Date: 01/12/2017 09:20 AM

Trichloroethene

Vinyl chloride

m&p-Xylene

Surrogates

Toluene-d8 (S)

o-Xylene

Methyl-tert-butyl ether

1.1.2.2-Tetrachloroethane

4-Methyl-2-pentanone (MIBK)

Pace Project No.: 2047806

Sample: MW-15A Lab ID: 2047806012 12/22/16 09:38 Receive Collected: Prepared Parameters Results Units Report Limit DF Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 12/28/16 21:10 75-15-0 Carbon disulfide ND ug/L 1.0 L3 1 Carbon fetrachloride ND ug/L 0.50 1 12/28/16 21:10 56-23-5 Chlorobenzene ND ug/L 0.50 12/28/16 21:10 108-90-7 Chloroethane NΩ ug/L 0.50 12/28/16 21:10 75-00-3 Chloroform ND ug/L 0.50 12/28/16 21:10 67-66-3 ND 0.50 12/28/16 21:10 74-87-3 Chloromethane ug/L ND 0.20 12/28/16 21:10 96-12-8 1,2-Dibromo-3-chloropropane ug/L Dibromochloromethane ND 0.50 12/28/16 21:10 124-48-1 ug/L 1 1,2-Dibromoethane (EDB) ND ug/L 1.0 12/28/16 21:10 106-93-4 Dichlorodifluoromethane ND 1.0 12/28/16 21:10 75-71-8 ug/L 1,1-Dichloroethane ND 0.50 12/28/16 21:10 75-34-3 ug/L 12/28/16 21:10 107-06-2 1,2-Dichloroethane ND 0.50 1 ug/L 1,1-Dichloroethene ND ug/L 0.50 1 12/28/16 21:10 75-35-4 12/28/16 21:10 156-59-2 cis-1,2-Dichloroethene ND ug/L 1.0 1 12/28/16 21:10 156-60-5 trans-1,2-Dichloroethene ND ug/L 0.50 1 12/28/16 21:10 78-87-5 1,2-Dichloropropane ND ug/L 0.50 1 12/28/16 21:10 10061-01-5 cis-1,3-Dichloropropene ND 0.50 ug/L 1 12/28/16 21:10 10061-02-6 trans-1,3-Dichloropropene ND 0.50 ug/L 1 12/28/16 21:10 100-41-4 0.50 Ethylbenzene ND ug/L 1 12/28/16 21:10 591-78-6 2-Hexanone ND ug/L 1.0 1 12/28/16 21:10 98-82-8 Isopropylbenzene (Cumene) ND 1.0 ug/L 1

2.0

0.50

0.50

1.0

0.50

0.50

0.50

0.50

0.50

0.50

0.50

0.50

2.0

1.0

72-126

68-124

79-119

1.0

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

ND

ND

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6.6

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ND

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106

98

100

ug/L

ug/L

ug/L

ug/L

ua/L

ua/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

%.

%.

%.



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Phenanthrene

Date: 01/12/2017 09:20 AM

2047806

Pace Project No.: 2047606					187	#5138	141	
Sample: MW-15B2	Lab ID: 204	7806013	Collected: 12/22	/16 10:23	Received: 42	22/16.18.15 M	ătrix Sot r	
Parameters	Results	Units	Report Limit	DF	Prepared	With the	No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Pre	paration N	Method: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50) 1	12/28/16 10:52	01/06/17 00:24		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0) 1	12/28/16 10:52	01/06/17 00:24		
Surrogates	20	0.4	40.40		40,000,40,40,50	04100147 00:04	000 00 0	
n-Pentacosane (S)	36	%.	16-137			01/06/17 00:24		
o-Terphenyl (S)	46	%.	10-12	i 1	12/28/16 10:52	01/06/17 00:24	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	nod: EPA 8	015/8021					
Gasoline Range Organics	78.4	ug/L	50.0) 1		12/30/16 15:43		
Surrogates 4-Bromofluorobenzene (S)	90	%.	44-14	3 1		12/30/16 15:43	460-00-4	
4-BIOIIIOIIIOIODENZENE (3)	30	70.	44-14	, ,		12/30/10 13.45	400-00-4	
6020 MET ICPMS	Analytical Met	nod: EPA 6	020 Preparation M	ethod: EP	A 3010			
Arsenic	0.019	mg/L	0.001	1	12/30/16 06:50	01/06/17 12:01	7440-38-2	
Chromium	ND	mg/L	0.001	1	12/30/16 06:50	01/06/17 12:01	7440-47-3	
Lead	ND	mg/L	0.001	1	12/30/16 06:50	01/06/17 12:01	7439-92-1	
Vanadium	ND	mg/L	0.005) 1	12/30/16 06:50	01/06/17 12:01	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation M	ethod: EP	A 3005A			
Arsenic, Dissolved	14.0	ug/L	1.	0 1	12/30/16 06:50	01/03/17 16:17	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.1	0 1	12/30/16 06:50	01/03/17 16:17	7440-47-3	
Lead, Dissolved	ND	ug/L	1.	0 1	12/30/16 06:50	01/03/17 16:17	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.	0 1	12/30/16 06:50	01/03/17 16:17	7440-62-2	
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation M	ethod: EF	PA 7470			
Mercury	ND	ug/L	0.2	0 1	12/29/16 09:37	12/29/16 16:36	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation M	ethod: EF	PA 7470			
Mercury, Dissolved	ND	ug/L	0.2	0 1	12/29/16 11:58	12/29/16 18:34	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Prepai	ation Met	thod: EPA 3510			
Acenaphthene	ND	ug/L	0.1	0 1	12/28/16 11:52	01/06/17 15:55	83-32-9	
Acenaphthylene	ND	ug/L	0.1	0 1	12/28/16 11:52	01/06/17 15:55	208-96-8	
Anthracene	ND	ug/L	0.1	0 1	12/28/16 11:52	01/06/17 15:55	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.1			01/06/17 15:55		
Benzo(a)pyrene	ND	ug/L	0.1			01/06/17 15:55		
Benzo(b)fluoranthene	ND	ug/L	0.1			01/06/17 15:55		
Benzo(g,h,i)perylene	ND	ug/L	0.1			2 01/06/17 15:55		
Benzo(k)fluoranthene	ND	ug/L	0.1			2 01/06/17 15:55		
Chrysene	ND	ug/L	0.1			01/06/17 15:55		
Dibenz(a,h)anthracene	ND	ug/L	0.1			2 01/06/17 15:55		
Fluoranthene	ND	ug/L ug/L	0.1			2 01/06/17 15:55		
Fluorene	ND	ug/L	0.1			2 01/06/17 15:55		
Indeno(1,2,3-cd)pyrene	ND	ug/L ug/L	0.1			2 01/06/17 15:55		
2-Methylnaphthalene	ND	ug/L ug/L	0.1			2 01/06/17 15:55		
Naphthalene	ND	ug/L ug/L	0.1			2 01/06/17 15:55		
- Napritialene	INL)	ugri	U. I		12/20/10 11:02	. 01/00/17 10:00	J 1-2U-U	

REPORT OF LABORATORY ANALYSIS

ND

ug/L

0.10

12/28/16 11:52 01/06/17 15:55 85-01-8

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

m&p-Xylene

Date: 01/12/2017 09:20 AM

2047806

Sample:	MW-15B2	Lab ID:	2047806013	Collected:	12/22/16 10:23	Received:

Prepared DF Qual Parameters Results Units Report Limit 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 12/28/16 11:52 01/06/17 15:55 129-00-0 ND 0.10 1 Pyrene ug/L Surrogates 2-Fluorobiphenyl (S) 69 %. 25-150 1 12/28/16 11:52 01/06/17 15:55 321-60-8 12/28/16 11:52 01/06/17 15:55 1718-51-0 Terphenyl-d14 (S) 63 %. 25-150 1 Analytical Method: EPA 5030B/8260 8260 MSV Low Level 12/28/16 21:28 67-64-1 15.6 4.0 C9 Acetone ug/L 1 ND 0.50 12/28/16 21:28 71-43-2 Benzene ug/L 1 ND 0.50 1 12/28/16 21:28 75-27-4 Bromodichloromethane uq/L 12/28/16 21:28 75-25-2 Bromoform ND ug/L 0.50 1 ug/L 12/28/16 21:28 74-83-9 Bromomethane ND 0.50 1 12/28/16 21:28 78-93-3 2-Butanone (MEK) ND ug/L 2.0 1 12/28/16 21:28 75-15-0 L3 Carbon disulfide ND ug/L 1.0 1 Carbon tetrachloride ND ug/L 0.50 1 12/28/16 21:28 56-23-5 ND 0.50 1 12/28/16 21:28 108-90-7 Chlorobenzene ug/L ND 0.50 1 12/28/16 21:28 75-00-3 Chloroethane ug/L Chloroform ND ug/L 0.50 1 12/28/16 21:28 67-66-3 ND 0.50 1 12/28/16 21:28 74-87-3 Chloromethane ug/L 12/28/16 21:28 96-12-8 1,2-Dibromo-3-chloropropane ND 0.20 1 ug/L 12/28/16 21:28 124-48-1 Dibromochloromethane ND ug/L 0.50 1 ug/L 12/28/16 21:28 106-93-4 1,2-Dibromoethane (EDB) ND 1.0 1 12/28/16 21:28 75-71-8 Dichlorodifluoromethane ND ug/L 1.0 1 12/28/16 21:28 75-34-3 0.50 1,1-Dichloroethane ND ug/L 1 12/28/16 21:28 107-06-2 0.50 1,2-Dichloroethane ND ug/L 1 0.50 12/28/16 21:28 75-35-4 ND 1 1,1-Dichloroethene ug/L NΩ 1 12/28/16 21:28 156-59-2 cis-1,2-Dichloroethene ug/L 1.0 trans-1,2-Dichloroethene 0.50 1 12/28/16 21:28 156-60-5 16 ug/L 12/28/16 21:28 78-87-5 0.50 1 1,2-Dichloropropane NΩ ug/L 0.50 12/28/16 21:28 10061-01-5 cis-1,3-Dichloropropene ND 1 ua/L 0.50 12/28/16 21:28 10061-02-6 trans-1,3-Dichloropropene ND 1 ug/L 0.50 12/28/16 21:28 100-41-4 Ethylbenzene ND 1 ug/L ND 1.0 12/28/16 21:28 591-78-6 2-Hexanone 1 ua/L 12/28/16 21:28 98-82-8 Isopropylbenzene (Cumene) ND 1.0 1 ua/L ND 2.0 12/28/16 21:28 79-20-9 Methyl acetate uq/L 1 12/28/16 21:28 75-09-2 ND 0.50 Methylene Chloride 1 ug/L 12/28/16 21:28 108-10-1 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 12/28/16 21:28 1634-04-4 Methyl-tert-butyl ether 3.6 ug/L 0.50 1 Styrene ND ug/L 1.0 1 12/28/16 21:28 100-42-5 0.50 12/28/16 21:28 79-34-5 1.1.2.2-Tetrachloroethane ND ua/L 1 ND 0.50 12/28/16 21:28 127-18-4 Tetrachloroethene uq/L 1 ND 0.50 12/28/16 21:28 108-88-3 Toluene ug/L 1 1,1,1-Trichloroethane ND 0.50 12/28/16 21:28 71-55-6 ug/L 1 1,1,2-Trichloroethane ND ug/L 0.50 12/28/16 21:28 79-00-5 12/28/16 21:28 79-01-6 Trichloroethene ND 0.50 ug/L 12/28/16 21:28 75-69-4 Trichlorofluoromethane ND ug/L 0.50 1 12/28/16 21:28 75-01-4 Vinyl chloride ND ug/L 0.50 1

REPORT OF LABORATORY ANALYSIS

ND

ug/L

2.0

1

12/28/16 21:28 179601-23-1



Date: 01/12/2017 09:20 AM

ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAM

Project: PUMA TERMINA Pace Project No.: 2047806	L MW SAMPLING					Negron		
Sample: MW-15B2	Lab ID: 204	7806013	Collected: 12/22/1	6 10:23		/22/16 13 \ 5 A	at Water	
Parameters	Results	Units	Report Limit	DF	Prepare	W.C.	AS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 56	030B/8260			C. C. C.		
o-Xylene	ND	ug/L	1.0	1		12/28/16 21:28	95-47-6	
Surrogates Dibromofluoromethane (S)	103	%.	72-126	1		12/28/16 21:28	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 21:28		
Toluene-d8 (S)	100	%.	79-119	1		12/28/16 21:28		
Sample: DUP002	Lab ID: 204	7806015	Collected: 12/22/	16 00:00	Received: 12	//22/16 13:15 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 8	015B Modified Prepa	ration M	lethod: EPA 3535	5	,	
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	10/08/16 10:50	01/06/17 00:52		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		01/06/17 00:52		
n-Pentacosane (S)	41	%.	16-137	1	12/28/16 10:52	01/06/17 00:52	629-99-2	
o-Terphenyl (S)	44	%.	10-121	1	12/28/16 10:52	01/06/17 00:52	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 16:10		
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/30/16 16:10	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EP/	4 3010			
Arsenic	0.0014	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:05	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:05	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:05	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 12:05	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:20	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:20	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:20	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:20	7440-62-2	
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:38	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:36	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by StM Prepara	tion Met	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	56-55-3	



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Methylene Chloride

Date: 01/12/2017 09:20 AM

2047806

Sample: DUP002 Lab ID: 2047806015 12/22/16 00:00 Collected: Parameters Results Units Report Limit DF CAS No Qual Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 8270 MSSV PAH by SIM SEP Benzo(a)pyrene ND ug/L 0.10 12/28/16 11:52 01/06/17 16:15 50-32-8 Benzo(b)fluoranthene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:15 205-99-2 Benzo(g,h,i)perylene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:15 191-24-2 Benzo(k)fluoranthene NΩ ug/L 0.10 1 12/28/16 11:52 01/06/17 16:15 207-08-9 12/28/16 11:52 01/06/17 16:15 218-01-9 Chrysene ND ug/L 0.10 1 Dibenz(a,h)anthracene 12/28/16 11:52 01/06/17 16:15 53-70-3 ND ug/L 0.10 1 Fluoranthene 12/28/16 11:52 01/06/17 16:15 206-44-0 ND ug/L 0.10 1 Fluorene 0.10 ND ug/L 1 12/28/16 11:52 01/06/17 16:15 86-73-7 12/28/16 11:52 01/06/17 16:15 193-39-5 Indeno(1,2,3-cd)pyrene ND 0.10 1 ug/L 2-Methylnaphthalene 0.10 12/28/16 11:52 01/06/17 16:15 91-57-6 ND 1 ug/L Naphthalene ND 0.10 1 12/28/16 11:52 01/06/17 16:15 91-20-3 ug/L Phenanthrene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:15 85-01-8 Pyrene ND 0.10 1 12/28/16 11:52 01/06/17 16:15 129-00-0 ug/L Surrogates 2-Fluorobiphenyl (S) 68 %. 25-150 1 12/28/16 11:52 01/06/17 16:15 321-60-8 25-150 12/28/16 11:52 01/06/17 16:15 1718-51-0 Terphenyl-d14 (S) 56 %. 1 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 27.0 ug/L 4.0 1 12/28/16 21:46 67-64-1 C9 Benzene ND ug/L 0.50 1 12/28/16 21:46 71-43-2 Bromodichloromethane ND ug/L 0.50 1 12/28/16 21:46 75-27-4 Bromoform NΩ ug/L 0.50 1 12/28/16 21:46 75-25-2 Bromomethane ND ug/L 0.50 1 12/28/16 21:46 74-83-9 2-Butanone (MEK) ND ug/L 2.0 1 12/28/16 21:46 78-93-3 Carbon disulfide ND 12/28/16 21:46 75-15-0 ug/L 1.0 1 1.3 Carbon tetrachloride ND 0.50 12/28/16 21:46 56-23-5 ug/L 1 Chlorobenzene ND ug/L 0.50 1 12/28/16 21:46 108-90-7 Chloroethane ND 0.50 12/28/16 21:46 75-00-3 ug/L 1 Chloroform ND 0.50 1 12/28/16 21:46 67-66-3 ug/L Chloromethane ND 0.50 1 12/28/16 21:46 74-87-3 ua/L 1,2-Dibromo-3-chloropropane ND 0.20 1 12/28/16 21:46 96-12-8 ua/L 12/28/16 21:46 124-48-1 Dibromochloromethane ND ua/L 0.50 1 12/28/16 21:46 106-93-4 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 21:46 75-71-8 Dichlorodifluoromethane ND ug/L 1.0 1 12/28/16 21:46 75-34-3 1.1-Dichloroethane ND ug/L 0.50 1 12/28/16 21:46 107-06-2 0.50 1.2-Dichloroethane ND ug/L 1 12/28/16 21:46 75-35-4 1.1-Dichloroethene ND ug/L 0.50 1 12/28/16 21:46 156-59-2 cis-1.2-Dichloroethene ND 1.0 ug/L 1 ND 0.50 12/28/16 21:46 156-60-5 trans-1.2-Dichloroethene ug/L 1 NĐ 0.5012/28/16 21:46 78-87-5 1.2-Dichloropropane ug/L 1 0.50 12/28/16 21:46 10061-01-5 cis-1,3-Dichloropropene ND ug/L 1 ND 0.50 12/28/16 21:46 10061-02-6 trans-1,3-Dichloropropene ug/L 1 Ethylbenzene ND 0.50 12/28/16 21:46 100-41-4 ug/L 1 2-Hexanone ND ug/L 1.0 1 12/28/16 21:46 591-78-6 Isopropylbenzene (Cumene) ND 1.0 1 12/28/16 21:46 98-82-8 ug/L Methyl acetate ND ug/L 2.0 1 12/28/16 21:46 79-20-9

REPORT OF LABORATORY ANALYSIS

0.50

1

ND

ua/L

12/28/16 21:46 75-09-2

(504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

FOWA TERMINAL WWW SAMILERNO

Sample: DUP002	Lab ID: 2047	7806015	Collected: 12/22/1	6 00:00	Received 12/22/10 9:15 Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Preparado An Ozta	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260		THE LICE	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 21:46 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	12/28/16 21:46 1634-04-4	
Styrene	ПИ	ug/L	1.0	1	12/28/16 21:46 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 21:46 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 21:46 127-18-4	
Toluene	ND	ug/L	0.50	1	12/28/16 21:46 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 21:46 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 21:46 79-00-5	
Trichloroethene	ND	ug/L	0.50	1	12/28/16 21:46 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 21:46 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 21:46 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 21:46 179601-23-1	
o-Xylene	ND	ug/L	1.0	1	12/28/16 21:46 95-47-6	
Surrogates						
Dibromofluoromethane (S)	104	%.	72-126	1	12/28/16 21:46 1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1	12/28/16 21:46 460-00-4	
Toluene-d8 (S)	100	%.	79-119	1	12/28/16 21:46 2037-26-5	

Sample: MW-15B MS/MSD	Lab ID: 204	7806016	Collected: 12/22/1	6 11:4	2 Received: 12	/22/16 13:15 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	nod: EPA 80	15B Modified Prepa	ration	Method: EPA 3535	;		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 01:20		R1
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	12/28/16 10:52	01/06/17 01:20		
n-Pentacosane (S)	53	%.	16-137	1	12/28/16 10:52	01/06/17 01:20	629-99-2	
o-Terphenyl (S)	52	%.	10-121	1	12/28/16 10:52	01/06/17 01:20	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	15/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 16:36		
4-Bromofluorobenzene (S)	90	%.	44-148	1		12/30/16 16:36	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 60	20 Preparation Meth	nod: E	PA 3010			
Arsenic	0.0014	mg/L	0.0010	1	12/30/16 06:50	01/06/17 10:34	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 10:34	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 10:34	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 10:34	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	20 Preparation Met	nod: E	PA 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:10	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:10	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:10	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:10	7440-62-2	

(504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

Sample: MW-15B MS/MSD

Date: 01/12/2017 09:20 AM

Lab ID: 2047806016

Collected: 12/22/16 11:42

Recei

Mercury ND	Parameters	Results	Units	Report Limit	ÐF	Prepare	West Her	AS No.	Qual
Marcury, Dissolved Analytical Method: EPA 7470 Preparation Method: EPA 7470 Preparation Method: EPA 7470 Preparation Method: EPA 8270 by SIM Preparation Method: EPA 8270 by	7470 Mercury	Analytical Meth	nod: EPA 747	0 Preparation Meth	nod: EF	PA 7470	ON SERVICES		
Moreury, Dissolved ND Ug/L D.20 1 12/29/16 11:57 12/29/16 11:17 7439-67-6 Fabron F	Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:20	7439-97-6	
Acenaphthene	7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 747	0 Preparation Meth	nod: EF	PA 7470			
Acenaphthene ND	Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:17	7439-97-6	
Acenaphthylene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 208-96-8 R1 Anthracene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 120-12.7 R1 Benza(a)amhracene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 56-5-3 R1 Benza(a)pyrene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 56-32-8 R1 Benza(b)fluorantene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 56-39-2 R1 Benza(b)fluorantene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 50-32-8 R1 Benza(b)fluorantene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 027-08-9 R1 Benza(b)fluorantene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 027-08-9 R1 Dibenz(a,h)anthracene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 027-08-9 R1 Dibenz(a,h)anthracene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 03-09-8 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 03-70-8 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 03-70-8 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 03-70-8 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 03-70-8 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 03-70-8 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 03-70-8 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 03-70-8 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 03-70-8 R1 Elucranthene ND ug/L 0.50 1 12/28/16 11.52 01/06/17 16.35 03-70-8 R1 Elucranthene ND ug/L 0.50 1 12/28/16 11.52 01/06/17 16.35 03-10-8 Elucranthene ND ug/L 0.50 1 12/28/16 11.52 01/06/17 16.35 03-10-8 Elucranthene ND ug/L 0.50 1 12/28/16 11.52 01/06/17 16.35 03-10-8	8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 827	0 by SIM Preparati	ion Met	thod: EPA 3510			
Anthracene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 120-12.7 R1 Benzo(a)pyrene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 58-55-3 R1 Benzo(a)pyrene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 58-55-3 R1 Benzo(a)pyrene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 505-39-2 R1 Benzo(a)pyrene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 505-39-2 R1 Benzo(a)pyrene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 505-39-2 R1 Benzo(a)pyrene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 505-39-2 R1 Benzo(a)pyrene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 507-39-8 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 507-39-8 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 507-39-8 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 507-30 R1 Fluoranthene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-40-9 R1 Fluoranthene ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-40-9 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-40-9 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-40-9 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-37-7 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-37-7 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-39-8 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-39-8 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-39-8 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-16 R1 Chrysone ND ug/L 0.10 1 12/28/16 11.52 01/06/17 16.35 508-16 R1 Chrysone ND ug/L 0.50 1 12/28/16 11.52 01/06/17 16.35 508-16 R1 Chrysone ND ug/L 0.50 1 12/28/16 11.52 01/06/17 16.35 508-16 R1 Chrysone ND ug/L 0.50 1 12/28/16 11.52 01/06/17 16.35 508-16 R1 Chrysone ND ug/L 0.50 1 12/28/16 11.52 01/06/17 16.35 508-16 R1 Chrysone ND ug/L 0.50 1 12/28/16 11.52 01/06/17 16.35 508-16 R1 Chrysone ND ug/L 0.50 1 12/28/16 11.52 01/06/17 16.35 508-36 R1 Chrysone ND ug/L 0.50 1 12/28/16 11.53 578-24 R1 Chrysone ND ug/L 0.50 1 12/28/16 11.35 578-24 R1 Chrysone ND ug/L 0.50 1 12/28/16 11.35 578-25 1 L1.00 Chrysone ND ug	Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	83-32-9	R1
Benzo(a)parihracene	Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	208-96-8	R1
Benzo(a)pyrene ND ug/L 0.10 1 12/28/16 11:52 01/08/17 16.35 05-32-8 R1	Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	120-12-7	R1
Benzo((b) Tuoranthene ND	Benzo(a)anthracene	ND		0.10	1	12/28/16 11:52	01/06/17 16:35	56-55-3	R1
Benzo(g,h,i)perylene	Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	50-32-8	R1
Benzok/ liuoranthene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 218-01-9 R1 Chrysene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 218-01-9 R1 Dibenz(a), planthracene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 53-70-3 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 53-70-3 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 53-70-3 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 53-70-3 R1 Elucranthene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 91-37-6 R1 R1 R1 R1 R1 R1 R1 R	Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	205-99-2	R1
Chrysene	Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	191-24-2	R1
Dibonz(a,h)anthracene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 53-70-3 R1	Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	207-08-9	R1
Fluoranthene ND	Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	218-01-9	R1
Fluorene ND	Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	53-70-3	R1
Indeno(1,2,3-cd)pyrene	Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	206-44-0	R1
2-Methylnaphthalene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 91-57-6 R1 Naphthalene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 91-20-3 R1 Phenanthrene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 91-20-3 R1 Pyrene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 129-00-0 R1 Surrogates 2-Fluorobiphenyl (S) 83 %. 25-150 1 12/28/16 11:52 01/06/17 16:35 321-60-8 Tenebrenyl 674 8 25-150 1 12/28/16 11:52 01/06/17 16:35 321-60-8 R1 4 0 1 12/28/16 11:52 01/06/17 16:35 321-60-8 R1 4 0 1 12/28/16 11:52 01/06/17 16:35 321-60-8 R1 4 0 1 12/28/16 11:52 01/06/17 16:35 321-60-8 8 3 % 25-150 1	Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	86-73-7	R1
Naphthalene	Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	193-39-5	R1
Phenanthrene ND ug/L 0.10 1 12/28/16 11:52 01/06/17 16:35 85-01-8 R1	2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	91-57-6	R1
Pyrene	Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	91-20-3	R1
Surrogates Sur	Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	85-01-8	R1
Surrogates Sur	Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	129-00-0	R1
Terphenyl-d14 (\$) 64 %. 25-150 1 2/28/16 11:52 01/06/17 16:35 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Accitone 22.9 ug/L 4.0 1 12/28/16 17:35 67-64-1 CP Benzene ND ug/L 0.50 1 12/28/16 17:35 75-27-4 PA Bromodichloromethane ND ug/L 0.50 1 12/28/16 17:35 75-27-4 PA Bromomethane ND ug/L 0.50 1 12/28/16 17:35 75-25-2 Bromomethane ND ug/L 0.50 1 12/28/16 17:35 76-52-2 Bromomethane ND ug/L 0.50 1 12/28/16 17:35 75-15-0 L1,M0 Carbon disulfide ND ug/L 0.50 1 12/28/16 17:35 76-63-35 L1,M0 <td>Surrogates</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Surrogates								
8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 22.9 ug/L 4.0 1 12/28/16 17:35 67-64-1 C9 Benzene ND ug/L 0.50 1 12/28/16 17:35 71-43-2 Paramodichloromethane ND ug/L 0.50 1 12/28/16 17:35 75-27-4 Paramodichloromethane ND ug/L 0.50 1 12/28/16 17:35 75-15-0 L1,Mo Paramodichloromethane ND ug/L 0.50 1 12/28/16 17:35 75-15-0 L1,Mo Paramodichloromethane ND <td>2-Fluorobiphenyl (S)</td> <td>83</td> <td>%.</td> <td>25-150</td> <td>1</td> <td>12/28/16 11:52</td> <td>01/06/17 16:35</td> <td>321-60-8</td> <td></td>	2-Fluorobiphenyl (S)	83	%.	25-150	1	12/28/16 11:52	01/06/17 16:35	321-60-8	
Acetone 22.9 ug/L 4.0 1 12/28/16 17:35 67-64-1 C9 Benzene ND ug/L 0.50 1 12/28/16 17:35 71-43-2 Page 1 Bromodichloromethane ND ug/L 0.50 1 12/28/16 17:35 75-27-4 Page 1 Bromomethane ND ug/L 0.50 1 12/28/16 17:35 75-25-2 Page 2 Page 2 1 12/28/16 17:35 75-27-4 Page 3	Terphenyl-d14 (S)	64	%.	25-150	1	12/28/16 11:52	01/06/17 16:35	1718-51-0	
Benzene ND ug/L 0.50 1 12/28/16 17:35 71-43-2 Bromodichloromethane ND ug/L 0.50 1 12/28/16 17:35 75-27-4 Bromoform ND ug/L 0.50 1 12/28/16 17:35 75-25-2 Bromomethane ND ug/L 0.50 1 12/28/16 17:35 75-93-3 Carbon disulfide ND ug/L 0.50 1 12/28/16 17:35 75-15-0 L1,M0 Carbon disulfide ND ug/L 0.50 1 12/28/16 17:35 75-03-3 Chlorobenzene ND ug/L 0.50 1	8260 MSV Low Level	Analytical Meth	nod: EPA 500	30B/8260					
Bromodichloromethane ND ug/L 0.50 1 12/28/16 17:35 75-27-4 Bromoform ND ug/L 0.50 1 12/28/16 17:35 75-25-2 Bromomethane ND ug/L 0.50 1 12/28/16 17:35 74-83-9 2-Butanone (MEK) ND ug/L 2.0 1 12/28/16 17:35 78-93-3 Carbon disulfide ND ug/L 1.0 1 12/28/16 17:35 75-15-0 L1,M0 Carbon tetrachloride ND ug/L 0.50 1 12/28/16 17:35 56-23-5 Chlorobenzene ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloroform ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloromethane ND ug/L 0.50 1 12/28/16 17:35 76-66-3 1,2-Dibromo-3-chloropropane ND ug/L 0.50 1 12/28/16 17:35 76-12-8 Dibromochloromethane ND ug/L	Acetone						12/28/16 17:35	67-64-1	C9
Bromoform ND ug/L 0.50 1 12/28/16 17:35 75-25-2 Bromomethane ND ug/L 0.50 1 12/28/16 17:35 75-25-2 2-Butanone (MEK) ND ug/L 2.0 1 12/28/16 17:35 78-93-3 Carbon disulfide ND ug/L 1.0 1 12/28/16 17:35 75-15-0 L1,M0 Carbon tetrachloride ND ug/L 0.50 1 12/28/16 17:35 56-23-5 Chlorobenzene ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chlorocethane ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloroform ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloromethane ND ug/L 0.50 1 12/28/16 17:35 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.50 1 12/28/16 17:35 96-12-8 Dibromochloromethane ND ug/L 0.5	Benzene	ND	ug/L	0.50	1		12/28/16 17:35	71-43-2	
Bromomethane ND ug/L 0.50 1 12/28/16 17:35 74-83-9 2-Butanone (MEK) ND ug/L 2.0 1 12/28/16 17:35 78-93-3 Carbon disulfide ND ug/L 1.0 1 12/28/16 17:35 75-15-0 L1,M0 Carbon tetrachloride ND ug/L 0.50 1 12/28/16 17:35 56-23-5 C1,M0 Chlorobenzene ND ug/L 0.50 1 12/28/16 17:35 75-00-3 1 12/28/16 17:35 75-00-3 1 12/28/16 17:35 75-00-3 1 12/28/16 17:35 75-00-3 1 12/28/16 17:35 75-00-3 1 12/28/16 17:35 75-00-3 1 12/28/16 17:35 75-00-3 1 12/28/16 17:35 74-87-3 1 12/28/16 17:35 74-87-3 1 12/28/16 17:35 74-87-3 1 12/28/16 17:35 74-87-3 1 12/28/16 17:35 74-87-3 1 12/28/16 17:35 74-87-3 1 12/28/16 17:35 74-87-3 1 12/28/16 17:35 <	Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 17:35	75-27-4	
2-Butanone (MEK) ND ug/L 2.0 1 12/28/16 17:35 78-93-3 Carbon disulfide ND ug/L 1.0 1 12/28/16 17:35 75-15-0 L1,M0 Carbon tetrachloride ND ug/L 0.50 1 12/28/16 17:35 56-23-5 Chlorobenzene ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloroethane ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloromethane ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloromethane ND ug/L 0.50 1 12/28/16 17:35 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.50 1 12/28/16 17:35 96-12-8 Dibromochloromethane ND ug/L 0.50 1 12/28/16 17:35 124-48-1 1,2-Dibromoethane ND ug/L 1.0 1 12/28/16 17:35 75-71-8 1,1-Dichloroethane ND ug/L	Bromoform	ND	_	0.50			12/28/16 17:35	75-25-2	
Carbon disulfide ND ug/L 1.0 1 12/28/16 17:35 75-15-0 L1,M0 Carbon tetrachloride ND ug/L 0.50 1 12/28/16 17:35 56-23-5 Chlorobenzene ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloroethane ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloromethane ND ug/L 0.50 1 12/28/16 17:35 67-66-3 Chloromethane ND ug/L 0.50 1 12/28/16 17:35 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.50 1 12/28/16 17:35 96-12-8 Dibromochloromethane ND ug/L 0.50 1 12/28/16 17:35 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 17:35 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-71-8		ND	ug/L	0.50	1		12/28/16 17:35	74-83-9	
Carbon tetrachloride ND ug/L 0.50 1 12/28/16 17:35 56-23-5 Chlorobenzene ND ug/L 0.50 1 12/28/16 17:35 108-90-7 Chloroethane ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloroform ND ug/L 0.50 1 12/28/16 17:35 67-66-3 Chloromethane ND ug/L 0.50 1 12/28/16 17:35 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 12/28/16 17:35 96-12-8 Dibromochloromethane ND ug/L 0.50 1 12/28/16 17:35 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 17:35 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3	2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 17:35	78-93-3	
Chlorobenzene ND ug/L 0.50 1 12/28/16 17:35 108-90-7 Chloroethane ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloroform ND ug/L 0.50 1 12/28/16 17:35 67-66-3 Chloromethane ND ug/L 0.50 1 12/28/16 17:35 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 12/28/16 17:35 96-12-8 Dibromochloromethane ND ug/L 0.50 1 12/28/16 17:35 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 17:35 75-71-8 Dichlorodifluoromethane ND ug/L 1.0 1 12/28/16 17:35 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3	Carbon disulfide	ND	ug/L	1.0	1		12/28/16 17:35	75-15-0	L1,M0
Chloroethane ND ug/L 0.50 1 12/28/16 17:35 75-00-3 Chloroform ND ug/L 0.50 1 12/28/16 17:35 67-66-3 Chloromethane ND ug/L 0.50 1 12/28/16 17:35 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 12/28/16 17:35 96-12-8 Dibromochloromethane ND ug/L 0.50 1 12/28/16 17:35 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 17:35 75-71-8 Dichlorodifluoromethane ND ug/L 1.0 1 12/28/16 17:35 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3	Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 17:35	56-23-5	
Chloroform ND ug/L 0.50 1 12/28/16 17:35 67-66-3 Chloromethane ND ug/L 0.50 1 12/28/16 17:35 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 12/28/16 17:35 96-12-8 Dibromochloromethane ND ug/L 0.50 1 12/28/16 17:35 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 17:35 75-71-8 Dichlorodifluoromethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3 1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3	Chlorobenzene	ND		0.50	1		12/28/16 17:35	108-90-7	
Chloromethane ND ug/L 0.50 1 12/28/16 17:35 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 12/28/16 17:35 96-12-8 Dibromochloromethane ND ug/L 0.50 1 12/28/16 17:35 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 17:35 76-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 12/28/16 17:35 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3	Chloroethane	ND	ug/L	0.50	1		12/28/16 17:35	75-00-3	
1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 12/28/16 17:35 96-12-8 Dibromochloromethane ND ug/L 0.50 1 12/28/16 17:35 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 17:35 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 12/28/16 17:35 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3	Chloroform	ND	ug/L	0.50	1		12/28/16 17:35	67-66-3	
Dibromochloromethane ND ug/L 0.50 1 12/28/16 17:35 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 17:35 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 12/28/16 17:35 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3	Chloromethane	ND	ug/L	0.50	1		12/28/16 17:35	74-87-3	
1,2-Dibromoethane (EDB) ND ug/L 1.0 1 12/28/16 17:35 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 12/28/16 17:35 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3	1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 17:35	96-12-8	
Dichlorodifluoromethane ND ug/L 1.0 1 12/28/16 17:35 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3	Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 17:35	124-48-1	
1,1-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 75-34-3	1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 17:35	106-93-4	
·	Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 17:35	75-71-8	
1,2-Dichloroethane ND ug/L 0.50 1 12/28/16 17:35 107-06-2	1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 17:35	75-34-3	
	1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 17:35	107-06-2	



Date: 01/12/2017 09:20 AM

ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Parameters	Results	Units	Report Limit	DF	Prepared Prepared CAS No. Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	30B/8260		
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 17:35 75-35-4
cis-1,2-Dichloroethene	ПD	ug/L	1.0	1	12/28/16 17:35 156-59-2
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 17:35 156-60-5
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 17:35 78-87-5
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 17:35 10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 17:35 10061-02-6
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 17:35 100-41-4
2-Hexanone	ND	ug/L	1.0	1	12/28/16 17:35 591-78-6
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 17:35 98-82-8
Methyl acetate	ND	ug/L	2.0	1	12/28/16 17:35 79-20-9
Methylene Chloride	, ND	ug/L	0.50	1	12/28/16 17:35 75-09-2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 17:35 108-10-1
Methyl-tert-butyl ether	ND	ug/L	0.50	1	12/28/16 17:35 1634-04-4
Styrene	ND	ug/L	1.0	1	12/28/16 17:35 100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 17:35 79-34-5
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 17:35 127-18-4
Toluene	ND	ug/L	0.50	1	12/28/16 17:35 108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 17:35 71-55-6
1.1.2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 17:35 79-00-5
Trichloroethene	ND	ug/L	0.50	1	12/28/16 17:35 79-01-6
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 17:35 75-69-4
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 17:35 75-01-4
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 17:35 179601-23-1
o-Xylene	ND	ug/L	1.0	1	12/28/16 17:35 95-47-6
Surrogates		-5			.2.252
Dibromofluoromethane (S)	106	%.	72-126	1	12/28/16 17:35 1868-53-7
4-Bromofluorobenzene (S)	97	%.	68-124	1	12/28/16 17:35 460-00-4
Toluene-d8 (S)	100	%.	79-119	1	12/28/16 17:35 2037-26-5
Sample: FB-122216	Lab ID: 204	7806017	Collected: 12/22/1	£ 11.50	Received: 12/22/16 13:15 Matrix: Water

Lab ID: 2047	7806017	Collected: 12/22/1	6 11:50	Received: 12	2/22/16 13:15 N	latrix: Water	
Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Analytical Meth	nod: EPA 80	15/8021					
ND	ug/L	50.0	1		12/30/16 17:54		
89	%.	44-148	1		12/30/16 17:54	460-00-4	
Analytical Meth	od: EPA 50	30B/8260					
26.2	ug/L	4.0	1		12/28/16 22:04	67-64-1	C9
ND	ug/L	0.50	1		12/28/16 22:04	71-43-2	
ND	ug/L	0.50	1		12/28/16 22:04	75-27-4	
ND	ug/L	0.50	1		12/28/16 22:04	75-25-2	
ND	ug/L	0.50	1		12/28/16 22:04	74-83-9	
ND	ug/L	2.0	1		12/28/16 22:04	78-93-3	
ND	ug/L	1.0	1		12/28/16 22:04	75-15-0	L3
	Results Analytical Method 89 Analytical Method 26.2 ND ND ND ND ND ND ND	Analytical Method: EPA 80 ND ug/L 89 %. Analytical Method: EPA 50 26.2 ug/L ND ug/L ND ug/L ND ug/L ND ug/L ND ug/L ND ug/L ND ug/L ND ug/L ND ug/L ND ug/L ND ug/L ND ug/L ND ug/L	Results Units Report Limit Analytical Method: EPA 8015/8021 50.0 89 %. 44-148 Analytical Method: EPA 5030B/8260 42-148 26.2 ug/L 4.0 ND ug/L 0.50 ND ug/L 2.0	Results Units Report Limit DF Analytical Method: EPA 8015/8021 50.0 1 ND ug/L 50.0 1 89 %. 44-148 1 Analytical Method: EPA 5030B/8260 4.0 1 ND ug/L 0.50 1 ND ug/L 2.0 1	Results Units Report Limit DF Prepared Analytical Method: EPA 8015/8021 ND ug/L 50.0 1 89 %. 44-148 1 Analytical Method: EPA 5030B/8260 26.2 ug/L 4.0 1 ND ug/L 0.50 1 ND ug/L 2.0 1	Results Units Report Limit DF Prepared Analyzed Analytical Method: EPA 8015/8021 ND ug/L 50.0 1 12/30/16 17:54 89 %. 44-148 1 12/30/16 17:54 Analytical Method: EPA 5030B/8260 26.2 ug/L 4.0 1 12/28/16 22:04 ND ug/L 0.50 1 12/28/16 22:04	Results Units Report Limit DF Prepared Analyzed CAS No. Analytical Method: EPA 8015/8021 ND ug/L 50.0 1 12/30/16 17:54 460-00-4 89 %. 44-148 1 12/30/16 17:54 460-00-4 Analytical Method: EPA 5030B/8260 26.2 ug/L 4.0 1 12/28/16 22:04 67-64-1 ND ug/L 0.50 1 12/28/16 22:04 71-43-2 ND ug/L 0.50 1 12/28/16 22:04 75-27-4 ND ug/L 0.50 1 12/28/16 22:04 75-25-2 ND ug/L 0.50 1 12/28/16 22:04 74-83-9 ND ug/L 0.50 1 12/28/16 22:04 78-93-3



ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Sample: FB-122216	Lab ID: 204	7806017	Collected: 12/22	/16 11:50	Received: 12/22/16 13:1	5 Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared Analyze	ed CAS No.	Qua
8260 MSV Low Level	Analytical Meti	hod: EPA 5	030B/8260				
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 2	2:04 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 2	2:04 108-90-7	
Chloroethane	ND	ug/L	0.50) 1	12/28/16 2	2:04 75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 2	2:04 67-66-3	
Chloromethane	ND	ug/L	0.50	1	12/28/16 2	2:04 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 2	2:04 96-12-8	
Dibromochloromethane	ND	ug/L	0.50) 1	12/28/16 2	2:04 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 2	2:04 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 2	2:04 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50) 1	12/28/16 2	2:04 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50) 1	12/28/16 2	2:04 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50) 1	12/28/16 2	2:04 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0) 1	12/28/16 2	2:04 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50) 1	12/28/16 2	2:04 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50) 1	12/28/16 2	2:04 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50) 1	12/28/16 2	2:04 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50) 1		2:04 10061-02-6	
Ethylbenzene	ND	ug/L	0.50) 1	12/28/16 2	2:04 100-41-4	
2-Hexanone	ND	ug/L	1.0) 1	12/28/16 2	2:04 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0) 1	12/28/16 2	2:04 98-82-8	
Methyl acetate	ND	ug/L	2.0			2:04 79-20-9	
Methylene Chloride	ND	ug/L	0.50) 1		2:04 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1,9) 1	12/28/16 2	2:04 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.56) 1	12/28/16 2	2:04 1634-04-4	
Styrene	ND	ug/L	1.1	1	12/28/16 2	2:04 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.5) 1	12/28/16 2	2:04 79-34-5	
Tetrachloroethene	ND	ug/L	0.5) 1	12/28/16 2	2:04 127-18-4	
Toluene	ND	ug/L	0.5) 1	12/28/16 2	2:04 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.5) 1	12/28/16 2	22:04 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.5) 1		22:04 79-00-5	
Trichloroethene	ND	ug/L	0.5			22:04 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.5			22:04 75-69-4	
Vinyl chloride	ND	ug/L	0.5			22:04 75-01-4	
m&p-Xylene	ND	ug/L	2.			22:04 179601-23-1	
o-Xylene	ND	ug/L	1.			22:04 95-47-6	
Surrogates		-5		•			
Dibromofluoromethane (S)	105	%.	72-12	3 1	12/28/16 2	22:04 1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-12	1 1	12/28/16 2	22:04 460-00-4	
Toluene-d8 (S)	102	%.	79-11	9 1	12/28/16 2	22:04 2037-26-5	

REPORT OF LABORATORY ANALYSIS

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

71030

Analysis Method:

EPA 8015/8021

QC Batch Method:

EPA 8015/8021

Analysis Description:

Matrix: Water

8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples:

2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

METHOD BLANK: 297171 Associated Lab Samples:

2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

Blank Result

Reporting Limit

Qualifiers Analyzed

Parameter Gasoline Range Organics 4-Bromofluorobenzene (S) Units ug/L %.

ND 92

50.0 12/30/16 07:53 12/30/16 07:53 44-148

LABORATORY CONTROL SAMPLE: 297172

Parameter Units Spike Conc.

MS

Spike

Conc.

500

LCS Result 427

LCS % Rec

% Rec Limits

Qualifiers

Gasoline Range Organics 4-Bromofluorobenzene (S) ug/L %.

Units

ug/L

%.

500

85 95 61-136 44-148

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

500

MSD

297176

438

MSD

439

MSD % Rec

Max

Gasoline Range Organics 4-Bromofluorobenzene (S)

Date: 01/12/2017 09:20 AM

Parameter

2047806016 Result

ND

Spike Conc.

MS Result

Result

MS % Rec 83 % Rec Limits

RPD RPD n

20

Qual

15-147 83 94 94 44-148



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

71004

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description:

7470 Mercury

Associated Lab Samples:

2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

METHOD BLANK: 297033

Matrix: Water

Associated Lab Samples:

2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

Blank

Reporting

Parameter

Units

Result

Limit

Analyzed

Qualifiers

Mercury

ug/L

ND

12/29/16 17:11 0.20

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

Date: 01/12/2017 09:20 AM

Units

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

Qualifiers

Mercury

ug/L

2047713002

Result

Units

ug/L

1.1

106

80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

297035

ND

MS

MSD

297036

MSD MS

MSD

% Rec

Max RPD RPD Qual

Mercury

Spike

Spike Conc. Conc.

MS Result 1.0

Result % Rec 1.0 101 % Rec 101 Limits 75-125

0 20



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

71005

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description:

7470 Mercury

Associated Lab Samples:

2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297037

Matrix: Water

Associated Lab Samples:

2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Blank

Reporting

Parameter

Units

Result

Limit Analyzed

Qualifiers

Mercury

ug/L

NΩ

12/29/16 16:16

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

Spike Conc.

MS

LCS Result

LCS % Rec % Rec Limits

Qualifiers

Mercury

Units ug/L

MSD

1.1

110 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

297039

ND

297040

MS

MSD

MS

MSD % Rec

Max

Mercury

Units

ug/L

2047806016 Result

Spike Spike Conc. Conc.

Result

Result 1.0 1.0 % Rec 105 % Rec Limits 105 75-125 RPD RPD 0

20

Qual

Date: 01/12/2017 09:20 AM



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

71108

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description:

7470 Mercury Dissolved

Associated Lab Samples:

2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

METHOD BLANK: 297493

Matrix: Water

Associated Lab Samples:

2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

Blank

Reporting

Parameter

Units

Result

Limit

Analyzed

Qualifiers

Mercury, Dissolved

ug/L

ND

0.20 12/29/16 18:44

LABORATORY CONTROL SAMPLE:

Parameter

Units

ug/L

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

Qualifiers

Mercury, Dissolved

Units ug/L

1.1

110 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

297495

MSD

1

297496

MS MSD

MS

1.1

MSD % Rec

% Rec

Max

Parameter Mercury, Dissolved

Date: 01/12/2017 09:20 AM

ND

MS 2047713002 Spike Result Conc.

Spike Conc.

Result Result 1.1

% Rec 109 Limits 75-125 RPD RPD

Qual

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

71110

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description:

7470 Mercury Dissolved

Associated Lab Samples:

2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297497

Matrix: Water

Associated Lab Samples:

2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Blank Result

Units

Units

Reporting Limit

Analyzed

Qualifiers

Mercury, Dissolved

ug/L

ND

0.20 12/29/16 18:13

LABORATORY CONTROL SAMPLE: 297498

Parameter

Parameter

Parameter

Date: 01/12/2017 09:20 AM

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

Qualifiers

Mercury, Dissolved

Units ug/L

1.1

80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

297499

MSD

297500

MSD

113

MSD

% Rec

Max Qual

MS 2047806016 Spike

Spike Conc.

MS Result

MS Result % Rec

% Rec

Limits RPD RPD

Result Conc.

75-125

20

Mercury, Dissolved

ug/L ND 1.0

1.0

102



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

71131

/ 1131

Analysis Method:

EPA 6020

QC Batch Method: EPA 3010

Analysis Description:

2047806002 2047806003 2047806004 2047806005 5

6020 MET

Associated Lab Samples:

 $2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, \\2047806012, 2047806013, 2047806015, 2047806016$

METHOD BLANK: 297578

Matrix: Water

Associated Lab Samples:

Date: 01/12/2017 09:20 AM

2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806007, 2047806008, 2047806011, 2047806008, 20478060110, 20478060110, 20478060110, 20478060110, 20478060110, 20478060110, 20478060110, 20478060110, 20478060110, 20478060110, 204780

2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Resulf	Reporting Limit	Analyzed	Qualifiers
Arsenic	 mg/L	ND	0.0010	01/06/17 10:11	
Chromium	mg/L	ND	0.0010	01/06/17 10:11	
Lead	mg/L	ND	0.0010	01/06/17 10:11	
Vanadium	mg/L	ND	0.0050	01/06/17 10:11	

LABORATORY CONTROL SAMPLE:	297579	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	100	85-115	
Lead	mg/L	.02	0.019	97	84-115	
Vanadium	mg/L	.02	0.020	98	81-115	

MATRIX SPIKE & MATRIX SF	PIKE DUPLIC	CATE: 29758	0		297581							
			MS	MSD								
		2047806016	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	0.0014	.02	.02	0.021	0.020	99	94	80-120	5	20	
Chromium	mg/L	ND	.02	.02	0.020	0.019	98	91	80-120	6	20	
Lead	mg/L	ND	.02	.02	0.020	0.019	100	94	80-120	6	20	
Vanadium	mg/L	ND	.02	.02	0.021	0.020	100	94	80-120	6	20	



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

71126

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3005A

Analysis Description:

Matrix: Water

6020 MET Dissolved

Associated Lab Samples:

0020 MET BISSOIVES

ssociated Lab Samples.

2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297560 Associated Lab Samples:

Date: 01/12/2017 09:20 AM

2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011,

2047806012, 2047806013, 2047806015, 2047806016

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Chromium, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Lead, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Vanadium, Dissolved	ug/L	ND	5.0	01/03/17 17:55	

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.2	101	80-120	
Chromium, Dissolved	ug/L	20	20.0	100	80-120	
Lead, Dissolved	ug/L	20	19.4	97	80-120	
Vanadium, Dissolved	ug/L	20	20.3	101	80-120	

MATRIX SPIKE & MATRIX SF	PIKE DUPLIC	CATE: 29756	2		297563							
		0.0.170.001.0	MS	MSD			140		0/ D			
		2047806016	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic, Dissolved	ug/L	ND	20	20	20.2	19.9	97	96	75-125	2	20	
Chromium, Dissolved	ug/L	ND	20	20	19.1	19.6	95	98	75-125	3	20	
Lead, Dissolved	ug/L	ND	20	20	20.4	20.2	102	101	75-125	1	20	
Vanadium, Dissolved	ug/L	ND	20	20	20.0	19.8	97	96	75-125	1	20	



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

QC Batch: 70952 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level

Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

METHOD BLANK: 296849 Matrix: Water

Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

	,	Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1,2-Trichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1-Dichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1-Dichloroethene	ug/L	ND	0.50	12/28/16 16:07	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	12/28/16 16:07	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/28/16 16:07	
1,2-Dichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,2-Dichloropropane	ug/L	ND	0.50	12/28/16 16:07	
2-Butanone (MEK)	ug/L	ND	2.0	12/28/16 16:07	
2-Hexanone	ug/L	ND	1.0	12/28/16 16:07	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	12/28/16 16:07	
Acetone	ug/L	ND	4.0	12/28/16 16:07	
Benzene	ug/L	ND	0.50	12/28/16 16:07	
Bromodichloromethane	ug/L	ND	0.50	12/28/16 16:07	
Bromoform	ug/L	ND	0.50	12/28/16 16:07	
Bromomethane	ug/L	ND	0.50	12/28/16 16:07	
Carbon disulfide	ug/L	ND	1.0	12/28/16 16:07	
Carbon tetrachloride	ug/L	ND	0.50	12/28/16 16:07	
Chlorobenzene	ug/L	ND	0.50	12/28/16 16:07	÷
Chloroethane	ug/L	ND	0.50	12/28/16 16:07	
Chloroform	ug/L	ND	0.50	12/28/16 16:07	
Chloromethane	ug/L	ND	0.50	12/28/16 16:07	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/28/16 16:07	
cis-1,3-Dichloropropene	ug/L	ND	0.50	12/28/16 16:07	
Dibromochloromethane	ug/L	ND	0.50	12/28/16 16:07	
Dichlorodifluoromethane	ug/L	ND	1.0	12/28/16 16:07	
Ethylbenzene	ug/L	ND	0.50	12/28/16 16:07	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/28/16 16:07	
m&p-Xylene	ug/L	ND	2.0	12/28/16 16:07	
Methyl acetate	ug/L	ND	2.0	12/28/16 16:07	
Methyl-tert-butyl ether	ug/L	ND	0.50	12/28/16 16:07	
Methylene Chloride	ug/L	ND	0.50	12/28/16 16:07	
o-Xylene	ug/L	ND	1.0	12/28/16 16:07	
Styrene	ug/L	ND	1.0	12/28/16 16:07	
Tetrachioroethene	ug/L	ND	0.50	12/28/16 16:07	
Toluene	ug/L	ND	0.50	12/28/16 16:07	
trans-1,2-Dichloroethene	ug/L	ND	0.50	12/28/16 16:07	
trans-1,3-Dichloropropene	ug/L	ND	0.50	12/28/16 16:07	
Trichloroethene	ug/L	ND	0.50	12/28/16 16:07	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

METHOD BLANK: 296849

Matrix: Water

Associated Lab Samples:

Date: 01/12/2017 09:20 AM

2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008,

2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	12/28/16 16:07	
Vinyl chloride	ug/L	ND	0.50	12/28/16 16:07	
4-Bromofluorobenzene (S)	%.	100	68-124	12/28/16 16:07	
Dibromofluoromethane (S)	%.	103	72-126	12/28/16 16:07	
Toluene-d8 (S)	%.	99	79-119	12/28/16 16:07	

LABORATORY CONTROL SAMPLE:	296850					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc	Result	% Rec	Limits	Qualifiers
1,1,1-Trìchloroethane	ug/L	50	56.5	113	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	51.3	103	15-179	
1,1,2-Trichloroethane	ug/L	50	51.6	103	58-144	
1,1-Dichloroethane	ug/L	50	54.6	109	63-129	
1,1-Dichlaraethene	ug/L	50	53.9	108	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	51.1	102	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	53.4	107	52-161	
1,2-Dichloroethane	ug/L	50	55.6	111	57-148	
1,2-Dichloropropane	ug/L	50	54.6	109	66-128	
2-Butanone (MEK)	ug/L	50	59.7	119	32-183	
2-Hexanone	ug/L	50	54.3	109	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	53.7	107	26-171	
Acetone	ug/L	50	61.3	123	22-165	
Benzene	ug/L	50	56.8	114	62-131	
Bromodichloromethane	ug/L	50	51.1	102	69-132	
Bromoform	ug/L	50	46.7	93	35-166	
Bromomethane	ug/L	50	52.1	104	34-158	
Carbon disulfide	ug/L	50	65.6	131	31-128 L	0
Carbon tetrachloride	ug/L	50	52.0	104	54-144	
Chlorobenzene	ug/L	50	51.6	103	70-127	
Chloroethane	ug/L	50	46.9	94	17-195	
Chloroform	ug/L	50	51.9	104	73-134	
Chloromethane	ug/L	50	48.2	96	17-153	
cis-1,2-Dichloroethene	ug/L	50	51.8	104	68-129	
cis-1,3-Dichloropropene	ug/L	50	52.4	105	72-138	
Dibromochloromethane	ug/L	50	49.1	98	49-146	
Dichlorodifluoromethane	ug/L	50	45.4	91	10-179	
Ethylbenzene	ug/L	50	49.8	100	66-126	
Isopropylbenzene (Cumene)	ug/L	50	48.7	97	51-138	
m&p-Xylene	ug/L	100	100	100	65-129	
Methyl acetate	ug/L	50	54.7	109	20-142	
Methyl-tert-butyl ether	ug/L	50	51.7	103	37-166	
Methylene Chloride	ug/L	50	56.7	113	46-168	
o-Xylene	ug/L	50	50.0	100	65-124	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/12/2017 09:20 AM

2047806

_ABORATORY CONTROL SAMPLE:	296850					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Styrene	ug/L	50	50.9	102	72-133	
etrachloroethene	ug/L	50	48.9	98	46-157	
oluene	ug/L	50	53.0	106	69-126	
ans-1,2-Dichloroethene	ug/L	50	53.3	107	60-129	
ans-1,3-Dichloropropene	ug/L	50	54.3	109	59-149	
ichloroethene	ug/L	50	53.5	107	67-132	
chlorofluoromethane	ug/L	50	57.2	114	39-171	
nyl chloride	ug/L	50	42.6	85	27-149	
Bromofluorobenzene (S)	%.			99	68-124	
promofluoromethane (S)	%.			104	72-126	
luene-d8 (S)	%.			102	79-119	

MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 29685	1		296852							
			MS	MSD								
		2047806016	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	65.0	56.2	130	112	54-137	14	20	
1,1,2,2-Tetrachioroethane	ug/L	ND	50	50	57.2	49.4	114	99	15-187	15	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	56.1	49.1	112	98	59-148	13	20	
1,1-Dichloroethane	ug/L	ND	50	50	60.7	53.2	121	106	59-133	13	20	
1,1-Dichloroethene	ug/L	ND	50	50	63.0	55.4	126	111	44-146	13	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	56.4	48.8	113	98	23-166		20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	58.0	52.6	116	105	55-166	10	20	
1,2-Dichloroethane	ug/L	ND	50	50	61.0	52.4	122	105	56-154	15	20	
1,2-Dichloropropane	ug/L	, ND	50	50	60.2	52.5	120	105	62-135	14	20	
2-Butanone (MEK)	ug/L	ND	50	50	62.5	56.9	125	114	20-205	9	20	
2-Hexanone	ug/L	ND	50	50	56.3	51.1	113	102	25-189	10	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	58.2	51.1	116	102	23-184	13	20	
Acetone	ug/L	22.9	50	50	72.3	64.7	99	84	11-217	11	20	
Benzene	ug/L	NĐ	50	50	64.5	55.1	129	110	52-141	16	20	
Bromodichloromethane	ug/L	ND	50	50	57.0	49.8	114	100	70-134	14	20	
Bromoform	ug/L	ND	50	50	51.4	44.6	103	89	37-171	14	20	
Bromomethane	ug/L	ND	50	50	59.3	51 .5	119	103	34-155	14	20	
Carbon disulfide	ug/L	ND	50	50	83.1	68.3	166	136	28-130	19	20	M0
Carbon tetrachloride	ug/L	ND	50	50	61.2	53.7	122	107	48-146	13	20	
Chlorobenzene	ug/L	ND	50	50	58.6	50.3	117	101	67-129	15	20	
Chloroethane	ug/L	ND	50	50	54.3	47.6	109	95	12-192	13	20	
Chloroform	ug/L	ND	50	50	57.9	50.5	116	101	66-143	14	20	
Chloromethane	ug/L	ND	50	50	53.6	47.3	106	94	14-155	13	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	59.4	52.9	119	106	56-141	12	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	59.2	51.3	118	103	70-139	14	20	
Dibromochloromethane	ug/L	ND	50	50	53.5	47.2	107	94	50-150	13	20	
Dichtorodifluoromethane	ug/L	ND	50	50	54.8	47.6	110	95	10-173	14	20	
Ethylbenzene	ug/L	ND	50	50	57.5	49.5	115	99	57-135	15	20	

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/12/2017 09:20 AM

2047806

MATRIX SPIKE & MATRIX SPIR	(E DUPLIC	CATE: 29685		HOD	296852							
•		2047806016	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Isopropylbenzene (Cumene)	ug/L	ND	50	50	56.9	50.9	114	102	40-146	11	20	
m&p-Xylene	ug/L	ND	100	100	115	101	115	101	56-136	13	20	
Methyl acetate	ug/L	ND	50	50	51.2	47.0	102	94	10-142	9	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	56.9	50.4	114	101	35-176	12	20	
Methylene Chloride	ug/L	ND	50	50	60.5	51.8	121	104	45-166	16	20	
o-Xylene	ug/L	ND	50	50	56.5	49.7	113	99	57-133	13	20	
Styrene	ug/L	ND	50	50	48.5	41.6	97	83	58-144	15	20	
Tetrachloroethene	ug/L	ND	50	50	58.7	51.1	117	102	48-143	14	20	
Toluene	ug/L	ND	50	50	59.0	52.4	118	105	59-136	12	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	61.9	54.3	124	109	57-132	13	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	59.5	51.5	119	103	59-154	14	20	
Trichloroethene	u g /L	ND	50	50	61.9	53.5	124	107	58-140	15	20	
Trichlorofluoromethane	ug/L	ND	50	50	68.2	60.0	136	120	24-175	13	20	
Vinyl chloride	ug/L	ND	50	50	50.3	43.2	101	86	21-150	15	20	
4-Bromofluorobenzene (S)	%.						103	99	68-124			
Dibromofluoromethane (S)	%.						103	104	72-126			
Toluene-d8 (S)	%.						100	102	79-119			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

70938

938

Analysis Method:

EPA 8015B Modified

QC Batch Method:

EPA 3535

Analysis Description:

EPA 8015 ORO

Associated Lab Samples:

2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 296784

Matrix: Water

Associated Lab Samples:

Date: 01/12/2017 09:20 AM

2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011,

2047806012, 2047806013, 2047806015, 2047806016

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/05/17 17:51	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/05/17 17:51	
n-Pentacosane (S)	%.	35	16-137	01/05/17 17:51	
o-Terphenyl (S)	%.	41	10-121	01/05/17 17:51	

LABORATORY CONTROL SAMPLE:	296785					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.2J	50	10-115	
n-Pentacosane (S)	%.			66	16-137	
o-Terphenyl (S)	%.			77	10-121	

MATRIX SPIKE & MATRIX SPIR	KE DUPLIC	CATE: 29680	1		296802							
Parameter	Units	2047806016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.8	8.	0.58	0.71	52	69	10-122	21	20	R1
n-Pentacosane (S) o-Terphenyl (S)	%. %.						64 76	76 91	16-137 10-121			
o- recplienyi (5)	76.						70	91	10-12			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

70942

Analysis Method:

EPA 8270 by SIM

QC Batch Method:

EPA 3510

Analysis Description:

8270 Water by SIM MSSV

Associated Lab Samples:

2047806002, 2047806003

METHOD BLANK: 296823 Associated Lab Samples:

Date: 01/12/2017 09:20 AM

2047806002, 2047806003

Matrix: Water

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/06/17 14:35	
Acenaphthene	ug/L	ND	0.10	01/06/17 14:35	
Acenaphthylene	ug/L	ND	0.10	01/06/17 14:35	
Anthracene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(a)anthracene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(a)pyrene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Chrysene	ug/L	ND	0.10	01/06/17 14:35	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/06/17 14:35	
Fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Fluoren e	ug/L	ND	0.10	01/06/17 14:35	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/06/17 14:35	
Naphthalene	ug/L	ND	0.10	01/06/17 14:35	
Phenanthrene	ug/L	ND	0.10	01/06/17 14:35	
Pyrene	ug/L	ND	0.10	01/06/17 14:35	
2-Fluorobiphenyl (S)	%.	65	25-150	01/06/17 14:35	
Terphenyl-d14 (S)	%.	56	25-150	01/06/17 14:35	

LABORATORY CONTROL SAMPLE:	296824					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.4	60	35-150	
Acenaphthene	ug/L	4	2.6	65	35-150	
Acenaphthylene	ug/L	4	2.5	63	35-150	
Anthracene	ug/L	4	3.0	76	35-150	
Benzo(a)anthracene	ug/L	4	2.7	66	35-150	
Benzo(a)pyrene	ug/L	4	2.5	61	35-150	
Benzo(b)fluoranthene	ug/L	4	2.3	58	35-150	
Benzo(g,h,i)perylene	ug/L	4	2.6	64	35-150	
Benzo(k)fluoranthene	ug/L	4	2.3	58	35-150	
Chrysene	ug/L	4	2.5	62	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.1	77	35-150	
Fluoranthene	ug/L	4	2.5	62	35-150	
Fluorene	ug/L	4	2.5	61	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	2.9	73	35-150	
Naphthalene	ug/L	4	2.3	58	35-150	
Phenanthrene	ug/L	4	2.7	67	35-150	
Pyrene	ug/L	4	2.0	49	35-150	

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/12/2017 09:20 AM

2047806

LABORATORY CONTROL SAMPLE:	296824			•		
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			83	25-150	
Terphenyl-d14 (S)	%.			71	25-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

70943

Analysis Method:

EPA 8270 by SIM

QC Batch Method:

EPA 3510

Analysis Description:

8270 Water by SIM MSSV

Associated Lab Samples:

2047806004, 2047806005, 2047806006, 2047806007, 2047806008

METHOD BLANK: 296825

Date: 01/12/2017 09:20 AM

Matrix: Water

Associated Lab Samples: 2047806004, 2047806005, 2047806006, 2047806007, 2047806008

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/05/17 11:30	
Acenaphthene	ug/L	ND	0.10	01/05/17 11:30	
Acenaphthylene	ug/L	ND	0.10	01/05/17 11:30	
Anthracene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(a)anthracene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(a)pyrene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Chrysene	ug/L	ND	0.10	01/05/17 11:30	
ibenz(a,h)anthracene	ug/L	ND	0.10	01/05/17 11:30	
luoranthene	ug/L	ND	0.10	01/05/17 11:30	
luorene	ug/L	ND	0.10	01/05/17 11:30	
ideno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/05/17 11:30	
laphthalene	ug/L	ND	0.10	01/05/17 11:30	
henanthrene	ug/L	ND	0.10	01/05/17 11:30	
Pyrene	ug/L	ND	0.10	01/05/17 11:30	
-Fluorobiphenyl (S)	%.	97	25-150	01/05/17 11:30	
erphenyl-d14 (S)	%.	98	25-150	01/05/17 11:30	

LABORATORY CONTROL SAMPLE:	296826					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L		3.3	83	35-150	
Acenaphthene	ug/L	4	3.6	89	35-150	
Acenaphthylene	ug/L	4	3.4	86	35-150	
Anthracene	ug/L	4	4.5	112	35-150	
Benzo(a)anthracene	ug/L	4	3.9	97	35-150	
Benzo(a)pyrene	ug/L	4	3.6	89	35-150	
Benzo(b)fluoranthene	ug/L	4	3.6	90	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.1	101	35-150	
Benzo(k)fluoranthene	ug/L	4	3.6	90	35-150	
Chrysene	ug/L	4	3.6	91	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.5	113	35-150	
Fluoranthene	ug/L	4	3.6	91	35-150	
Fluorene	ug/L	4	3.5	88	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.3	108	35-150	
Naphthalene	ug/L	4	3.1	78	35-150	
Phenanthrene	ug/L	4	3.9	97	35-150	
Pyrene	ug/L	4	3.3	82	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047806

QC Batch:

70982

Analysis Method:

EPA 8270 by SIM

QC Batch Method:

EPA 3510

Analysis Description:

8270 Water by SIM MSSV

Associated Lab Samples:

2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 296923

Matrix: Water

Date: 01/12/2017 09:20 AM

Associated Lab Samples: 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/06/17 13:55	
Acenaphthene	ug/L	ND	0.10	01/06/17 13:55	
Acenaphthylene	ug/L	ND	0.10	01/06/17 13:55	
Anthracene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(a)anthracene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(a)pyrene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Chrysene	ug/L	ND	0.10	01/06/17 13:55	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/06/17 13:55	
Fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Fluorene	ug/L	ND	0.10	01/06/17 13:55	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/06/17 13:55	
Naphthalene	ug/L	ND	0.10	01/06/17 13:55	
Phenanthrene	ug/L	ND	0.10	01/06/17 13:55	
Pyrene	ug/L	ND	0.10	01/06/17 13:55	
2-Fluorobiphenyl (S)	%.	70	25-150	01/06/17 13:55	
Terphenyl-d14 (S)	%.	60	25-150	01/06/17 13:55	

LABORATORY CONTROL SAMPLE	296924					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.7	68	35-150	
Acenaphthene	u g /L	4	2.9	72	35-150	
Acenaphthylene	ug/L	4	2.9	72	35-150	
Anthracene	ug/L	4	3.4	85	35-150	
Benzo(a)anthracene	ug/L	4	3.1	76	35-150	
Benzo(a)pyrene	ug/L	4	2.8	. 71	35-150	
Benzo(b)fluoranthene	ug/L	4	2.7	68	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.0	75	35-150	
Benzo(k)fluoranthene	ug/L	4	2.7	66	35-150	
Chrysene	ug/L	4	2.8	69	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.6	90	35-150	
Fluoranthene	ug/L	4	2.8	71	35-150	
Fluorene	ug/L	4	2.8	70	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.4	84	35-150	
Naphthalene	ug/L	4	2.6	64	35-150	
Phenanthrene	ug/L	4	3.1	77	35-150	
Pyrene	ug/L	4	2.3	57	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/12/2017 09:20 AM

2047806

LABORATORY CONTROL SAMPLE	296924					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			94	25-150	
Terphenyl-d14 (S)	%.			79	25-150	

MATRIX SPIKE & MATRIX SPIKE DUPLIC	ATE: 29692	5		296926							
		MS	MSD								
	2047806016	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
2-Methylnaphthalene ug/L	ND ND	4	4	2.7	3.5	69	87	35-150	23	20	R1
Acenaphthene ug/L	ND	4	4	2.9	3.6	72	90	35-150	23	20	R1
Acenaphthylene ug/L	ND	4	4	2.9	3.7	73	91	35-150	22	20	R1
Anthracene ug/L	ND	4	4	3.0	3.9	76	96	35-150	23	20	R1
Benzo(a)anthracene ug/L	ND	4	4	3.0	3.7	74	93	35-150	23	20	R1
Benzo(a)pyrene ug/L	ND	4	4	2.5	3.2	63	80	35-150	24	20	R1
Benzo(b)fluoranthene ug/L	ND	4	4	2.6	3.3	66	83	35-150	23	20	R1
Benzo(g,h,i)perylene ug/L	ND	4	4	2.8	3.6	70	89	35-150	24	20	R1
Benzo(k)fluoranthene ug/L	ND	4	4	2.6	3.4	65	84	35-150	25	20	R1
Chrysene ug/L	ND	4	4	2.8	3.6	70	89	35-150	24	20	R1
Dibenz(a,h)anthracene ug/L	ND	4	4	3.4	4.4	85	109	35-150	25	20	R1
Fluoranthene ug/L	ND	4	4	2.9	3.7	73	92	35-150	22	20	R1
Fluorene ug/L	ND	4	4	2.9	3.6	73	91	35-150	22	20	R1
Indeno(1,2,3-cd)pyrene ug/L	ND	4	4	3.2	4.1	79	101	35-150	25	20	R1
Naphthalene ug/L	ND	4	4	2.6	3.3	65	83	35-150	24	20	R1
Phenanthrene ug/L	ND	4	4	3.1	3.9	78	98	35-150	22	20	R1
Pyrene ug/L	ND	4	4	2.1	2.7	54	67	35-150	22	20	R1
2-Fluorobiphenyl (S) %.						73	96	25-150		20	
Terphenyl-d14 (S) %.						60	78	25-150		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

.ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
047806002	EB-122116	EPA 3535	70938	EPA 8015B Modified	71466
047806003	MW-83B2	EPA 3535	70938	EPA 8015B Modified	71466
047806004	MW-AD-4	EPA 3535	70938	EPA 8015B Modified	71466
047806005	MW-33A	EPA 3535	70938	EPA 8015B Modified	71466
047806006	MW-P116	EPA 3535	70938	EPA 8015B Modified	71466
047806007	MW-P117	EPA 3535	70938	EPA 8015B Modified	71466
47806008	MW-65A	EPA 3535	70938	EPA 8015B Modified	71466
47806011	EB-122216	EPA 3535	70938	EPA 8015B Modified	71466
47806012	MW-15A	EPA 3535	70938	EPA 8015B Modified	71466
47806013	MW-15B2	EPA 3535	70938	EPA 8015B Modified	71466
047806015	DUP002	EPA 3535	70938	EPA 8015B Modified	71466
47806016	MW-15B MS/MSD	EPA 3535	70938	EPA 8015B Modified	71466
47806001	TB-122116	EPA 8015/8021	71030		
47806002	EB-122116	EPA 8015/8021	71030		
047806003	MW-83B2	EPA 8015/8021	71030		
47806004	MW-AD-4	EPA 8015/8021	71030		
047806005	MW-33A	EPA 8015/8021	71030		
047806006	MW-P116	EPA 8015/8021	71030		
47806007	MW-P117	EPA 8015/8021	71030		
47806008	MW-65A	EPA 8015/8021	71030		
47806009	FB-122116	EPA 8015/8021	71030		
47806010	TB-122216	EPA 8015/8021	71030		
47806011	EB-122216	EPA 8015/8021	71030		
047806012	MW-15A	EPA 8015/8021	71030		
47806013	MW-15B2	EPA 8015/8021	71030		
047806015	DUP002	EPA 8015/8021	71030		
047806016	MW-15B MS/MSD	EPA 8015/8021	71030		
47806017	FB-122216	EPA 8015/8021	71030		
047806002	EB-122116	EPA 3010	71131	EPA 6020	71235
047806003	MW-83B2	EPA 3010	71131	EPA 6020	71235
047806004	MW-AD-4	EPA 3010	71131	EPA 6020	71235
047806005	MW-33A	EPA 3010	71131	EPA 6020	71235
047806006	MW-P116	EPA 3010	71131	EPA 6020	71235
47806007	MW-P117	EPA 3010	71131	EPA 6020	71235
47806008	MW-65A	EPA 3010	71131	EPA 6020	71235
047806011	EB-122216	EPA 3010	71131	EPA 6020	71235
047806012	MW-15A	EPA 3010	71131	EPA 6020	71235
047806013	MW-15B2	EPA 3010	71131	EPA 6020	71235
047806015	DUP002	EPA 3010	71131	EPA 6020	71235
147806016	MW-15B MS/MSD	EPA 3010	71131	EPA 6020	71235
147806002	EB-122116	EPA 3005A	71126	EPA 6020	71232
047806003	MW-83B2	EPA 3005A	71126	EPA 6020	71232
47806004	MW-AD-4	EPA 3005A	71126	EPA 6020	71232
47806005	MW-33A	EPA 3005A	71126	EPA 6020	71232
47806006	MW-P116	EPA 3005A	71126	EPA 6020	71232
347806007	MW-P117	EPA 3005A	71126	EPA 6020	71232
047806008	MW-65A	EPA 3005A	71126	EPA 6020	71232



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Date: 01/12/2017 09:20 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047806011	EB-122216	EPA 3005A	71126	EPA 6020	71232
2047806012	MW-15A	EPA 3005A	71126	EPA 6020	71232
047806013	MW-15B2	EPA 3005A	71126	EPA 6020	71232
047806015	DUP002	EPA 3005A	71126	EPA 6020	71232
047806016	MW-15B MS/MSD	EPA 3005A	71126	EPA 6020	71232
047806002	EB-122116	EPA 7470	71004	EPA 7470	71141
047806003	MW-83B2	EPA 7470	71004	EPA 7470	71141
047806004	MW-AD-4	EPA 7470	71004	EPA 7470	71141
047806005	MW-33A	EPA 7470	71004	EPA 7470	71141
047806006	MW-P116	EPA 7470	71004	EPA 7470	71141
047806007	MW-P117	EPA 7470	71004	EPA 7470	71141
047806008	MW-65A	EPA 7470	71005	EPA 7470	71139
047806011	EB-122216	EPA 7470	71005	EPA 7470	71139
047806012	MW-15A	EPA 7470	71005	EPA 7470	71139
047806013	MW-15B2	EPA 7470	71005	EPA 7470	71139
047806015	DUP002	EPA 7470	71005	EPA 7470	71139
047806016	MW-15B MS/MSD	EPA 7470	71005	EPA 7470	71139
047806002	EB-122116	EPA 7470	71108	EPA 7470	71142
047806003	MW-83B2	EPA 7470	71108	EPA 7470	71142
047806004	MW-AD-4	EPA 7470	71108	EPA 7470	71142
047806005	MW-33A	EPA 7470	71108	EPA 7470	71142
047806006	MW-P116	EPA 7470	71108	EPA 7470	71142
047806007	MW-P117	EPA 7470	71108	EPA 7470	71142
047806008	MW-65A	EPA 7470	71110	EPA 7470	71140
047806011	EB-122216	EPA 7470	71110	EPA 7470	71140
047806012	MW-15A	EPA 7470	71110	EPA 7470	71140
047806013	MW-15B2	EPA 7470	71110	EPA 7470	71140
047806015	DUP002	EPA 7470	71110	EPA 7470	71140
047806016	MW-15B MS/MSD	EPA 7470	71110	EPA 7470	71140
047806002	EB-122116	EPA 3510	70942	EPA 8270 by SIM	71522
047806003	MW-83B2	EPA 3510	70942	EPA 8270 by SIM	71522
0 4 78 06 004	MW-AD-4	EPA 3510	70943	EPA 8270 by SIM	71436
047806005	MW-33A	EPA 3510	70943	EPA 8270 by SIM	71436
047806006	MW-P116	EPA 3510	70943	EPA 8270 by SIM	71436
047806007	MW-P117	EPA 3510	70943	EPA 8270 by SIM	71436
047806008	MW-65A	EPA 3510	70943	EPA 8270 by SIM	71436
047806011	EB-122216	EPA 3510	70982	EPA 8270 by SIM	71521
047806012	MW-15A	EPA 3510	70982	EPA 8270 by SIM	71521
047806013	MW-15B2	EPA 3510	70982	EPA 8270 by SIM	71521
047806015	DUP002	EPA 3510	70982	EPA 8270 by SIM	71521
047806016	MW-15B MS/MSD	EPA 3510	70982	EPA 8270 by SIM	71521
047806001	TB-122116	EPA 5030B/8260	70952		
047806002	EB-122116	EPA 5030B/8260	70952		
047806003	MW-83B2	EPA 5030B/8260	70952		
2047806004	MW-AD-4	EPA 5030B/8260	70952		



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/12/2017 09:20 AM

2047806

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047806005	MW-33A	EPA 5030B/8260	70952		
2047806006	MW-P116	EPA 5030B/8260	70952		
2047806007	MW-P117	EPA 5030B/8260	70952		
2047806008	MW-65A	EPA 5030B/8260	70952		
2047806009	FB-122116	EPA 5030B/8260	70952		
2047806010	TB-122216	EPA 5030B/8260	70952		
2047806011	EB-122216	EPA 5030B/8260	70952		
2047806012	MW-15A	EPA 5030B/8260	70952		
2047806013	MW-15B2	EPA 5030B/8260	70952		
2047806015	DUP002	EPA 5030B/8260	70952		
2047806016	MW-15B MS/MSD	EPA 5030B/8260	70952		
2047806017	FB-122216	EPA 5030B/8260	70952		

CHAIN-OF-CUSTODY / A WO#: 2047806

/ www.pacelabs.com							1 of 2	Į.
Section A	Section B		voice Information.		8 1 411		621/22	
Required Client Information:	Required Project Information:	Atte	tention: 20478	Ø G		, 1	621433	
Company: Area 313	E Prain (Cor	ompany Name:		REGULATORY A	AGENCY		
Address: cityview plaza	15 sile copy to	Add	ddress:		☐ NPDES ☐		ER DRINKING WA	TER
401 RZ 165 Km 1.2 GL	existe #	<u> </u>	ace Quote		T UST F	RCRA	OTHER	l
Email To: Embero @ prosite	Purchase Order No	Ref	eference:	3 3	Site Location	1		
Phone: 117 - 4000 FAX1-17		membedgae Ewar Lac Lac	ene Project Company Reproject Reproj	<u>Chondo</u>	STATE:	P.B.		
Requested Due Date/TAT:	Project Number: EOO 3.		ace Provine A.	10000000 TOTAL TOTAL	Analysis Filtered			
					Analysis Pittered			
Section D Required Client Information SAMPLE ID (A.Z. 0.91) Sample IDS MUST BE UNIQUE ###################################	And Colon /	TIME DATE TIME S 1261/6 07(7) 1261/6 07(7) 1261/6 07(7) 1261/6 07(7) 1261/6 1056 12/21/6 1405 12/21/6 1521 12/21/6 1607 12/21/6 1615 12/21/6 0738 AFFILIATION DATE, 12/22/6 12/22/6 12/22/6 0738	1315 MMO 17:00 Fe	TANIAN TO COTHER TO COTHER THAN THE STATE OF	AXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Tayla Chlorine (Y/N)		
		OLEY 12-83-16		-A-tac	2(2)23-Ve	10204.1	1414	<u> </u>
		COLEX PARTIE	1000	1)		(, \		1
Page 71 of 73	ORIGINAL :	SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SIGNATURE of SAMPLER:	Andr Colon	DATE Signs (MM/DD/YY	ed 12/22/1L	F-AL	Received on toe (Y/N) Received on toe (Y/N) Custody (Y/N) F-G-050er (Y/N)	Samples Intact (Y/N)

Pace Analytical*

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately,

www.pacelabs.com				Page:	2 of Z
Section A Section			Section C Invoice Information:		
Report To	Project Information:	15	Attention:		1621434
Grand Arcalis	EPrain Co	1300	Company Name:	REGULATORY AGENCY	
and the ideas along the land			Address:	T NPDES T GROUND	D WATER DRINKING WATER
401 Rd 165 Km 1.2 cm mark	Order No.:		Pace Quote	UST RCRA	C OTHER
Email To: Column Project N Project			Reference: Pace Project Manager: Two Redondo	Site Location 0 0	
PHONE: NA PAGE			Manager: Pace Profile #:	Site Location PR	
Requested Due Date/TAT: GTG	lumber: Egp 3. 1603	2.6	Requested	Analysis Filtered (Y/N)	
	 		Preservatives		
Section D Matrix Codes Required Client Information MATRIX / CODE)MP)	COLLECTED			<u> </u>
Drinking Water DW Water WT	COMPOSI COMPOS	TE COMPOSITE END/GRAB			
Waste Water WW Product P	DE COMPOST START	END/GRAB		3 8	()
SAMPLE ID Soil/Solid SL Oil OIL Wipe WP	(see valid codes to left) (G=GRAB C=COMP)		ritainers /ed /ed /ed // / / / / / / / / / / / / / / / / /	Werent Andrews	Residual Chlorine (Y/N) Pace Project No./ Lab I.D.
(A-Z, 0-9 / ,-) Air AR	that little	I GW	CONTAINERS Seerved S		E C
Sample IDs MUST BÉ UNIQUE Tissue TS Other OT	X CODE	1 1 1 1		3 2 3	land
# 5	MATRIX SAMPLE	TIME DATE TIME	# OF CONTAINERS Unpreserved H2SO4 HNO5 HNO5 HCI NaOH NazS203 Methanol Other VOC\$ \$250 VOC\$ \$250 VOC\$ \$250 VOC\$ \$250 VOC\$ \$250 VOC\$ \$250 VOC\$ \$250	Metals of Dissalved	Pace Project No./ Lab I.D.
# WEW	Ď Ø DATE	THE COLUMN			
1 MM-1287	W7 6	12/24/6 1142		XXX	
2 MW-15B	W5 60	12/2/4	10 5 1 4 XXX	XXX	
3 Diboos	MO	12/27/16 1142	ID S I U I S CI	XXX	
4 MW-15B (MS)	1947 B	12/22/2 1142	10 5 1 4 1 1 1	(XX	
5 MW-15B (MSD)	wr o-	12/24/6 1150	4 4 XX		
6 FR-122216	357			▗ ┞ ┡ ┼┼┼┼┼	
9			_	- - - - - - - - - - - - - - - - - - - 	
9.					
10				- - - - - - - - - - 	
11					
12	RELINQUISHED BY /	AREILIATION DATE	TIME ACCEPTED BY AFFILIATION	DATE TIME	SAMPLE CONDITIONS
ADDITIONAL COMMENTS	A Prince Control Bar with a finite read of A Street		With the same of		40 V W /
LevelTV	Andre Colon	Arcado 12/11	Total Total	'	5.3
	2/82	Spea n-22		a 10-23-10 1030	41 11111
	7-	ed Ep 12-23-1	e 1030 C	00 100 100 100 100 100 100 100 100 100	(1) 919
Ţ.			\perp		
lag e		SAMPLER NAME AND SIGNAT		器等別部各樣企業	ramp in "C secal vad or toe (Y/N) Custcdy callet Cools (Y/N) (Y/N)
Page 72 ORIGIT	NAL	PRINT Name of SAMPL	DATE Sign	ed , /	Received on toe (Y/N) Custody Sealert Cooler (Y/N) Samples Intact (Y/N)
f 73		SIGNATURE of SAMPL	ER: (MM/DD/Y)	1: 12/22/16	F-ALL-Q-020rev.07, 15-May-2007

WO#: 2047806

Sample Condition Upo PM: JAR1

Due Date: 01/09/17

Pace Analytical	1000 Riverbend, Blvd., Suite F St. Rose, LA 70087	:		CLIENT Pi	98-ARCADISPR
Courier:	☐ Hired Courier		□ UP	S DHL	☐ USPS ☐ Customer ☐ Other Custody Seals intact: ☐ Yes ☐ No
Custody Seal on Cooler/Box P	lesent. [see or	001			e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de
Therometer ☐ Therm F Used: ☐ Therm F	isher IR 6	Type of Ice	: (W	Blue None	Samples on ice: [see COC]
Cooler Temperature: [see	COC] Temp	should be a	above fr	eezing to 6°C	Date and Initials of person examining contents:
Temp must be measured from Te	mperature blank when pr	resent		Comments:	
Temperature Blank Present"?		□Yes □No	. DN/A	1	
Chain of Custody Present:		ØYes □No	□n/a	2	
Chain of Custody Complete:		-⊟Yes □No	□n/A	3	
Chain of Custody Relinquishe	d:	PYes □No	□N/A	4	
Sampler Name & Signature o		ØYes □No	□N/A	5	
Samples Arrived within Hold		∐Yes □No	□N/A	6	
Sufficient Volume:		√Yes □No	□N(A	7	
Correct Containers Used:		Yes ONC	DN/A	В	<u> </u>
Filtered vol. Rec. for Diss, tes	its	□Yes □No	DN/A	9	
Sample Labels match COC:		ÆYes □No	o □n/a	10	
All containers received within precautionary and/or expiration	on dates.	√/es □No	o □N/A	11	
All containers needing chemi been checked (except VOA,	coliform, & O&G).	√es □N	o □N/A		preserative added? □Yes □No
All containers preservation of compliance with EPA recomm	necked found to be in mendation.	<u> </u>	<u> </u>	13 If added n	ecord tot no.: HNO3 H2SO4
Headspace in VOA Vials (>6		□Yes ZN		T	
Trip Blank Present:		√Yes □N	D	15	
Client Notification/ Resolu	tion:				
Person Contacted:					Date/Time:
Comments/ Resolution:					
					
	<u> </u>				
					
	<u>.</u>				





January 12, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

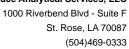
Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047713001	TB-121916		12/19/16 00:00	12/20/16 16:15
2047713002	EB-121916	Water	12/19/16 09:58	12/20/16 16:15
2047713003	MW-P120	Water	12/19/16 11:10	12/20/16 16:15
2047713004	MW-P122	Water	12/19/16 12:08	12/20/16 16:15
2047713005	MW-P123	Water	12/19/16 14:21	12/20/16 16:15
2047713006	MW-P124	Water	12/19/16 15:45	12/20/16 16:15
2047713007	MW-P121	Water	12/19/16 16:27	12/20/16 16:15
2047713008	FB-121916	Water	12/19/16 16:45	12/20/16 16:15
2047713009	TB-122016	Water	12/20/16 00:00	12/20/16 16:15
2047713010	EB-122016	Water	12/20/16 08:33	12/20/16 16:15
2047713011	MW-P119	Water	12/20/16 09:18	12/20/16 16:15
2047713012	MW-P118	Water	12/20/16 10:09	12/20/16 16:15
2047713013	MW-83A	Water	12/20/16 11:13	12/20/16 16:15
2047713014	MW-AD-01	Water	12/20/16 13:12	12/20/16 16:15
2047713015	MW-57A	Water	12/20/16 14:30	12/20/16 16:15
2047713016	MW-AD-03	Water	12/20/16 15:16	12/20/16 16:15
2047713017	FB-122016	Water	12/20/16 15:25	12/20/16 16:15
2047713018	DUP001	Water	12/20/16 00:00	12/20/16 16:15



SAMPLE ANALYTE COUNT

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047713001	TB-121916	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713002	EB-121916	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713003	MW-P120	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047713004	MW-P122	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047713005	MW-P123	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047713006	MW-P124	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS



SAMPLE ANALYTE COUNT

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713007	MW-P121	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713008	FB-121916	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713009	TB-122016	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713010	EB-122016	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713011	MW-P119	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713012	MW-P118	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS



SAMPLE ANALYTE COUNT

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

_ab ID	Sample ID	Method	Analysts	Analytes Reported	Laborator
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047713013	MW-83A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047713014	MW-AD-01	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	3	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047713015	MW-57A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	3	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047713016	MW-AD-03	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	3	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
047713017	FB-122016	EPA 8015/8021	MHM	2	PASI-N

REPORT OF LABORATORY ANALYSIS



SAMPLE ANALYTE COUNT

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 5030B/8260	MLS	45	PASI-N
2047713018 DUP001	EPA 8015B Modified	SLF	4	PASI-N	
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	3	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N



PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H2: Extraction or preparation conducted outside EPA method holding time.

- EB-121916 (Lab ID: 2047713002)
- MW-P120 (Lab ID: 2047713003)
- MW-P121 (Lab ID: 2047713007)
- MW-P122 (Lab ID: 2047713004)
- MW-P123 (Lab ID: 2047713005)
- MW-P124 (Lab ID: 2047713006)

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70881

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:



PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

18 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 6020

Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 7470
Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H2: Extraction or preparation conducted outside EPA method holding time.

DUP001 (Lab ID: 2047713018)
MW-57A (Lab ID: 2047713015)
MW-AD-01 (Lab ID: 2047713014)
MW-AD-03 (Lab ID: 2047713016)

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70811

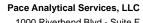
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 70840

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 71324

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.



Pace Analytical www.pacelabs.com

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PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 8270 by SIM

Description:8270 MSSV PAH by SIM SEPClient:BBL Caribe / Arcadis PRDate:January 12, 2017



PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

18 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 70852

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 296511)
 - Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70852

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047713003

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 296587)
 - Carbon disulfide
- MSD (Lab ID: 296588)
 - Carbon disulfide

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Sample: TB-121916	Lab ID: 204	7713001	Collected: 12/19/1	16 00:00	Received:	12/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/29/16 02:3	4	
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/29/16 02:3	4 460-00-4	
3260 MSV Low Level	Analytical Meth	hod: EPA 50	030B/8260					
Acetone	43.2	ug/L	4.0	1		12/27/16 12:1	7 67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 12:1	7 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 12:1	7 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 12:1	7 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 12:1	7 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 12:1	7 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 12:1	7 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 12:1	7 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 12:1	7 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 12:1	7 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 12:1		
Chloromethane	ND	ug/L	0.50	1		12/27/16 12:1	7 74-87-3	
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 12:1		
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 12:1		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 12:1		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 12:1		
,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:1		
,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:1		
,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:1		
sis-1,2-Dichloroethene	ND ND	ug/L	1.0	1		12/27/16 12:1		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:1		
,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 12:1		
sis-1,3-Dichloropropene	ND ND	ug/L	0.50	1			7 10061-01-5	
rans-1,3-Dichloropropene	ND ND	ug/L ug/L	0.50	1			7 10061-01-3	
Ethylbenzene	ND ND	-	0.50	1		12/27/16 12:1		
2-Hexanone	ND ND	ug/L ug/L	1.0	1		12/27/16 12:1		
sopropylbenzene (Cumene)	ND ND	ug/L ug/L	1.0	1		12/27/16 12:1		
	ND ND	•	2.0	1		12/27/16 12:1		
Methyl acetate		ug/L						
Methylene Chloride	ND ND	ug/L	0.50 1.0	1 1		12/27/16 12:1		
-Methyl-2-pentanone (MIBK)		ug/L				12/27/16 12:1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 12:1		
Styrene	ND	ug/L	1.0	1		12/27/16 12:1		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 12:1		
etrachloroethene	ND	ug/L	0.50	1		12/27/16 12:1		
oluene	ND	ug/L	0.50	1		12/27/16 12:1		
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 12:1		
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 12:1		
richloroethene	ND	ug/L	0.50	1		12/27/16 12:1		
richlorofluoromethane	ND	ug/L	0.50	1		12/27/16 12:1		
/inyl chloride	ND	ug/L	0.50	1		12/27/16 12:1		
n&p-Xylene	ND	ug/L	2.0	1			7 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 12:1	7 95-47-6	



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: TB-121916	Lab ID: 204	7713001	Collected: 12/19/1	6 00:00	Received: 1	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	111	%.	72-126	1		12/27/16 12:1		
4-Bromofluorobenzene (S)	100	%.	68-124	1		12/27/16 12:1		
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 12:1	7 2037-26-5	
Sample: EB-121916	Lab ID: 204	7713002	Collected: 12/19/1	6 09:58	Received: 1	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 12:1	6	H2
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		01/04/17 12:1		H2
n-Pentacosane (S)	38	%.	16-137	1	12/27/16 11:20	01/04/17 12:1	6 629-99-2	
-Terphenyl (S)	51	%.	10-121	1	12/27/16 11:20	01/04/17 12:1	6 84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/29/16 03:0	1	
-Bromofluorobenzene (S)	92	%.	44-148	1		12/29/16 03:0	1 460-00-4	
020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	1 01/03/17 14:0	7 7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	1 01/03/17 14:0	7 7440-47-3	
.ead	ND	mg/L	0.0010	1	12/27/16 07:44	1 01/03/17 14:0	7 7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/27/16 07:44	1 01/03/17 14:0	7 7440-62-2	
020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
rsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:2	4 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:2	4 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:2	4 7439-92-1	
anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:2	4 7440-62-2	
470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	7 12/29/16 17:2	0 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	470 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	3 12/29/16 18:4	8 7439-97-6	
270 MSSV PAH by SIM SEP			270 by SIM Preparati					
cenaphthene	ND	ug/L	0.10	1		3 12/30/16 20:1		
cenaphthylene	ND	ug/L	0.10	1		3 12/30/16 20:1		
Anthracene	ND	ug/L	0.10	1		12/30/16 20:1		
Benzo(a)anthracene	ND	ug/L	0.10	1		12/30/16 20:1		
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:1	2 50-32-8	

REPORT OF LABORATORY ANALYSIS



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: EB-121916	Lab ID: 204	7713002	Collected: 12/19/1	6 09:58	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	2 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	2 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	2 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	2 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	2 206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	91-57-6	
laphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	2 85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	2 129-00-0	
Surrogates		ū						
?-Fluorobiphenyl (S)	84	%.	25-150	1	12/24/16 11:23	12/30/16 20:12	2 321-60-8	
erphenyl-d14 (S)	92	%.	25-150	1	12/24/16 11:23	12/30/16 20:12	2 1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
cetone	79.9	ug/L	4.0	1		12/27/16 12:35	67-64-1	
enzene	ND	ug/L	0.50	1		12/27/16 12:35	71-43-2	
romodichloromethane	ND	ug/L	0.50	1		12/27/16 12:35	75-27-4	
romoform	ND	ug/L	0.50	1		12/27/16 12:35	75-25-2	
romomethane	ND	ug/L	0.50	1		12/27/16 12:35	74-83-9	
-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 12:35	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 12:35	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 12:35	5 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 12:35	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 12:35	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 12:35	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 12:35	74-87-3	
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 12:35	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 12:35	124-48-1	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 12:35	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 12:35	5 75-71-8	
,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:35	75-34-3	
,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:35	5 107-06-2	
,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:35	75-35-4	
is-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 12:35	5 156-59-2	
ans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:35	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 12:35		
is-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 12:35		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 12:35		
thylbenzene	ND	ug/L	0.50	1		12/27/16 12:35		
-Hexanone	ND	ug/L	1.0	1		12/27/16 12:35		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 12:35		
Methyl acetate	ND	ug/L	2.0	1		12/27/16 12:35		
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 12:35		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 12:35		



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: EB-121916	Lab ID: 204	7713002	Collected: 12/19/1	6 09:58	Received: 12	2/20/16 16:15 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 12:35	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 12:35	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 12:35	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 12:35	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 12:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 12:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 12:35	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 12:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 12:35		
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 12:35		
m&p-Xylene	ND	ug/L	2.0	1			179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 12:35		
Surrogates	115	ug/ L	1.0	•		12/21/10 12:00	, , , , , , ,	
Dibromofluoromethane (S)	111	%.	72-126	1		12/27/16 12:35	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/27/16 12:35		
Toluene-d8 (S)	102	%.	79-119	1		12/27/16 12:35		
Sample: MW-P120	Lab ID: 204	7713003	Collected: 12/19/1	6 11:10	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 12:45		H2
Oil Range Organics (>C28-C40))	
	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 12:45		H2
Surrogates	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 12:45		H2
•	ND 30	mg/L %.	1.0 16-137	1		01/04/17 12:45 01/04/17 12:45	5	H2
n-Pentacosane (S)		•			12/27/16 11:20		5 629-99-2	H2
n-Pentacosane (S) o-Terphenyl (S)	30	%. %.	16-137 10-121	1	12/27/16 11:20	01/04/17 12:45	5 629-99-2	H2
n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	30 40	%. %.	16-137 10-121	1	12/27/16 11:20	01/04/17 12:45	5 629-99-2 5 84-15-1	H2
n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	30 40 Analytical Meth	%. %. nod: EPA 80	16-137 10-121 015/8021	1	12/27/16 11:20	01/04/17 12:45 01/04/17 12:45	5 629-99-2 5 84-15-1	H2
n-Pentacosane (S) n-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	30 40 Analytical Meth ND 91	%. %. nod: EPA 80 ug/L %.	16-137 10-121 015/8021 50.0	1 1 1	12/27/16 11:20 12/27/16 11:20	01/04/17 12:45 01/04/17 12:45 12/29/16 03:27	5 629-99-2 5 84-15-1	H2
n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS	30 40 Analytical Meth ND 91	%. %. nod: EPA 80 ug/L %.	16-137 10-121 015/8021 50.0 44-148	1 1 1	12/27/16 11:20 12/27/16 11:20	01/04/17 12:45 01/04/17 12:45 12/29/16 03:27	6 629-99-2 6 84-15-1 7 460-00-4	H2
n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic	30 40 Analytical Meth ND 91 Analytical Meth	%. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010	1 1 1 1 nod: EPA	12/27/16 11:20 12/27/16 11:20 3 3010 12/27/16 07:44	01/04/17 12:45 01/04/17 12:45 12/29/16 03:27 12/29/16 03:27	6 629-99-2 6 84-15-1 7 460-00-4 7440-38-2	H2
n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium	30 40 Analytical Meth ND 91 Analytical Meth ND ND	%. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010	1 1 1 1 nod: EPA 1	12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44	01/04/17 12:45 01/04/17 12:45 12/29/16 03:27 12/29/16 03:27 01/03/17 14:11 01/03/17 14:11	6 629-99-2 6 84-15-1 7 460-00-4 7440-38-2 7440-47-3	H2
n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead	30 40 Analytical Meth ND 91 Analytical Meth ND ND ND	%. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010	1 1 1 1 nod: EPA 1 1	12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	01/04/17 12:45 01/04/17 12:45 12/29/16 03:27 12/29/16 03:27 01/03/17 14:11 01/03/17 14:11	6 629-99-2 6 84-15-1 7 460-00-4 7440-38-2 7440-47-3 7439-92-1	H2
n-Pentacosane (S) p-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) G020 MET ICPMS Arsenic Chromium Lead Vanadium	30 40 Analytical Meth ND 91 Analytical Meth ND ND ND ND	%. %. ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010 0.0050	1 1 1 1 nod: EPA 1 1 1	12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	01/04/17 12:45 01/04/17 12:45 12/29/16 03:27 12/29/16 03:27 01/03/17 14:11 01/03/17 14:11	6 629-99-2 6 84-15-1 7 460-00-4 7440-38-2 7440-47-3 7439-92-1	H2
n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	30 40 Analytical Meth ND 91 Analytical Meth ND ND ND ND	%. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L mg/L mg/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 1 nod: EPA 1 1 1 1 nod: EPA	12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	01/04/17 12:45 01/04/17 12:45 12/29/16 03:27 12/29/16 03:27 01/03/17 14:11 01/03/17 14:11 01/03/17 14:11	6 629-99-2 6 84-15-1 7 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	H2
n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	30 40 Analytical Meth ND 91 Analytical Meth ND ND ND ND ND ND ND ND ND Analytical Meth ND	%. %. nod: EPA 86 ug/L %. nod: EPA 66 mg/L mg/L mg/L mg/L ood: EPA 66 ug/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth 1.0	1 1 1 1 1 1 1 1 1 1 nod: EPA	12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 3005A 12/30/16 06:50	01/04/17 12:45 01/04/17 12:45 12/29/16 03:27 12/29/16 03:27 01/03/17 14:11 01/03/17 14:11 01/03/17 14:11 01/03/17 14:11	6 629-99-2 6 84-15-1 7 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2 8 7440-38-2	H2
n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved	30 40 Analytical Meth ND 91 Analytical Meth ND ND ND ND ND ND ND ND ND ND ND ND ND	%. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L ug/L ug/L ug/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth 1.0	1 1 1 1 100: EPA 1 1 100: EPA	12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 3005A 12/30/16 06:50 12/30/16 06:50	01/04/17 12:45 01/04/17 12:45 12/29/16 03:27 12/29/16 03:27 01/03/17 14:11 01/03/17 14:11 01/03/17 14:11 01/03/17 16:28 01/03/17 16:28	6 629-99-2 6 84-15-1 7 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2 8 7440-38-2 8 7440-47-3	H2
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved Lead, Dissolved Vanadium, Dissolved	30 40 Analytical Meth ND 91 Analytical Meth ND ND ND ND ND ND ND ND ND Analytical Meth ND	%. %. nod: EPA 86 ug/L %. nod: EPA 66 mg/L mg/L mg/L mg/L ood: EPA 66 ug/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth 1.0	1 1 1 1 1 1 1 1 1 1 nod: EPA	12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 3005A 12/30/16 06:50 12/30/16 06:50 12/30/16 06:50	01/04/17 12:45 01/04/17 12:45 12/29/16 03:27 12/29/16 03:27 01/03/17 14:11 01/03/17 14:11 01/03/17 14:11 01/03/17 16:28 01/03/17 16:28	6 629-99-2 6 84-15-1 7 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2 8 7440-38-2 8 7440-47-3 7439-92-1	H2



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Sample: MW-P120	Lab ID: 204	7713003	Collected: 12/19/1	6 11:10	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EP/	A 7470	_		
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:2	6 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	٦ 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:5	9 7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:3	2 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:3	2 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:3	2 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23			
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23			
		•			12/24/16 11:23		-	
Benzo(k)fluoranthene	ND	ug/L	0.10	1				
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23			
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23			
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23			
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:3	2 91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:3	2 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:3	2 85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:3	2 129-00-0	
Surrogates		ŭ						
2-Fluorobiphenyl (S)	60	%.	25-150	1	12/24/16 11:23	12/30/16 20:3	2 321-60-8	
Terphenyl-d14 (S)	73	%.	25-150	1	12/24/16 11:23	12/30/16 20:3	2 1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
Acetone	15.1	ug/L	4.0	1		12/27/16 11:59		
Benzene	ND	ug/L	0.50	1		12/27/16 11:59	9 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 11:59	9 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 11:59	9 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 11:59	9 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 11:59	9 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 11:59	9 75-15-0	L3,M0
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 11:59		,
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 11:59		
Chloroethane	ND	ug/L	0.50	1		12/27/16 11:59		
Chloroform	ND	ug/L	0.50	1		12/27/16 11:59		
Chloromethane	ND ND	_	0.50	1		12/27/16 11:59		
		ug/L						
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 11:59		
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 11:59		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 11:59		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 11:59		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 11:59		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 11:59	9 107-06-2	



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-P120	Lab ID: 204	7713003	Collected: 12/19/1	6 11:10	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 11:59	9 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 11:59	9 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 11:59	9 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 11:59	9 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 11:59	9 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 11:59	9 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 11:59	9 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 11:59	9 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 11:59	9 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 11:59	9 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 11:59	9 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 11:59	9 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 11:59	9 1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 11:59	9 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 11:59	9 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 11:59		
Toluene	ND	ug/L	0.50	1		12/27/16 11:59		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 11:59		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 11:59		
Trichloroethene	ND	ug/L	0.50	1		12/27/16 11:59		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 11:59		
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 11:59		
m&p-Xylene	ND	ug/L	2.0	1			9 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 11:59		
Surrogates		~g/ -		•		12,21,101110		
Dibromofluoromethane (S)	109	%.	72-126	1		12/27/16 11:59	9 1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/27/16 11:59	9 460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		12/27/16 11:59	9 2037-26-5	
Sample: MW-P122	Lab ID: 204	7713004	Collected: 12/19/1	6 12:08	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
					·			
8015M DRO/ORO Organics	Analytical Meti	IUU. EFA O	015B Modified Prepa	iauUII W	eniou. EFA 3030	,		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 13:1:	3	H2
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 13:1:	3	H2
Surrogates								
n-Pentacosane (S)	46	%.	16-137	1	12/27/16 11:20			
o-Terphenyl (S)	48	%.	10-121	1	12/27/16 11:20	01/04/17 13:1:	3 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 03:5	3	
Surrogates	00	0/	44.440	4		10/00/10 00 5	2 460 00 4	
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/29/16 03:5	3 460-00-4	



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Pace Project No.: 2047713								
Sample: MW-P122	Lab ID: 204	7713004	Collected: 12/19/	16 12:08	Received: 12	2/20/16 16:15 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Met	hod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:15	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:15	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:15	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:15	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:32	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:32	2 7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:32	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:32	7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	70 Preparation Met	hod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:28	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:01	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	70 by SIM Preparat	ion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	2 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	2 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	2 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	2 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	2 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	2 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	2 206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	85-01-8	
Pyrene Surrogates	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	2 129-00-0	
2-Fluorobiphenyl (S)	68	%.	25-150	1	12/24/16 11:23	12/30/16 20:52	2 321-60-8	
Terphenyl-d14 (S)	87	%.	25-150	1		12/30/16 20:52		
8260 MSV Low Level	Analytical Meth	nod: EPA 50	30B/8260					
Acetone	13.6	ug/L	4.0	1		12/27/16 12:53	8 67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 12:53		
Bromodichloromethane	ND ND	ug/L ug/L	0.50	1		12/27/16 12:53		
Bromoform	ND ND	ug/L ug/L	0.50	1		12/27/16 12:53		
Bromomethane	ND ND	ug/L ug/L	0.50	1		12/27/16 12:53		
2-Butanone (MEK)	ND ND	ug/L ug/L	2.0	1		12/27/16 12:53		



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 12:53	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 12:53	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 12:53	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 12:53	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 12:53	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 12:53	3 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 12:53	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 12:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 12:53	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 12:53	3 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:53	3 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 12:53	156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:53	3 156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 12:53		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 12:53	3 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 12:53		
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 12:53		
2-Hexanone	ND	ug/L	1.0	1		12/27/16 12:53		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 12:53		
Methyl acetate	ND	ug/L	2.0	1		12/27/16 12:53		
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 12:53		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 12:53		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 12:53		
Styrene	ND	ug/L	1.0	1		12/27/16 12:53		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 12:53		
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 12:53		
Toluene	ND	ug/L	0.50	1		12/27/16 12:53		
I,1,1-Trichloroethane	ND ND	ug/L	0.50	1		12/27/16 12:53		
1,1,2-Trichloroethane	ND ND	ug/L	0.50	1		12/27/16 12:53		
Frichloroethene	ND ND	ug/L ug/L	0.50	1		12/27/16 12:53		
Frichlorofluoromethane	ND ND	ug/L ug/L	0.50	1		12/27/16 12:53		
/inyl chloride	ND ND	ug/L ug/L	0.50	1		12/27/16 12:53		
n&p-Xylene	ND ND	ug/L ug/L	2.0	1		12/27/16 12:53		
	ND ND	Ū	2.0 1.0	1		12/27/16 12:53		
o-Xylene Surrogates	ND	ug/L	1.0	I		12/21/10 12:53	90-47-0	
Dibromofluoromethane (S)	112	%.	72-126	1		12/27/16 12:53	1868-53-7	
4-Bromofluorobenzene (S)	98	%. %.	68-124	1		12/27/16 12:53		
Foluene-d8 (S)	101	%. %.	79-119	1		12/27/16 12:53		



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Sample: MW-P123	Lab ID: 204	7713005	Collected: 12/19/	16 14:21	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3015M DRO/ORO Organics	Analytical Met	hod: EPA 80	115B Modified Prepa	aration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 13:41		H2
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 13:41		H2
n-Pentacosane (S)	42	%.	16-137	1	12/27/16 11:20	01/04/17 13:41	629-99-2	
o-Terphenyl (S)	44	%.	10-121	1	12/27/16 11:20	01/04/17 13:41	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	15/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/29/16 04:19)	
4-Bromofluorobenzene (S)	94	%.	44-148	1		12/29/16 04:19	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 60	20 Preparation Met	hod: EPA	A 3010			
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:19	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:19	7440-47-3	
_ead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:19	7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:19	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	20 Preparation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:36	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:36	7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:36	7439-92-1	
/anadium, Dissolved	ND	ug/L	5.0	1		01/03/17 16:36		
7470 Mercury	Analytical Met	hod: EPA 74	70 Preparation Met	hod: EPA	A 7470			
Mercury	0.43	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:30	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 74	70 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:04	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	70 by SIM Preparat	tion Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	2 83-32-9	
Acenaphthylene	0.10	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	2 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	2 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	2 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	2 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	2 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		12/30/16 21:12		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		12/30/16 21:12		
Chrysene	ND	ug/L	0.10	1		12/30/16 21:12		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		12/30/16 21:12		
Fluoranthene	ND	ug/L	0.10	1		12/30/16 21:12		
Fluorene	0.25	ug/L ug/L	0.10	1		12/30/16 21:12		
	0.25 ND	ug/L ug/L	0.10	1		12/30/16 21:12		
ndeno(1 2 3-cd)nyrono	שמו	ug/∟	0.10	1	12/24/10 11.23	12/30/10 21:12	. 130-03-0	
		-	0.40	1	12/24/16 11:00	12/20/16 21.11	01-576	
ndeno(1,2,3-cd)pyrene 2-Methylnaphthalene Naphthalene	ND ND	ug/L ug/L	0.10 0.10	1 1		12/30/16 21:12 12/30/16 21:12		



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Sample: MW-P123	Lab ID: 204	7713005	Collected: 12/19/1	16 14:21	Received: 12	2/20/16 16:15 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparat	ion Meth	nod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	75	%.	25-150	1		12/30/16 21:12		
Terphenyl-d14 (S)	92	%.	25-150	1	12/24/16 11:23	12/30/16 21:12	1718-51-0	
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Acetone	11.3	ug/L	4.0	1		12/27/16 13:10	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 13:10	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 13:10	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 13:10	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 13:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 13:10	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 13:10		L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 13:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 13:10		
Chloroethane	ND	ug/L	0.50	1		12/27/16 13:10		
Chloroform	ND	ug/L	0.50	1		12/27/16 13:10		
Chloromethane	ND	ug/L	0.50	1		12/27/16 13:10		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 13:10		
Dibromochloromethane	ND ND	ug/L ug/L	0.50	1		12/27/16 13:10		
		-		1				
I,2-Dibromoethane (EDB)	ND	ug/L	1.0			12/27/16 13:10		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 13:10		
I,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:10		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:10		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:10		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 13:10		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 13:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 13:10	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 13:10	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 13:10	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 13:10	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 13:10	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 13:10	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 13:10	75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 13:10		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 13:10		
Styrene	ND	ug/L	1.0	1		12/27/16 13:10		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 13:10		
Tetrachloroethene	ND ND		0.50	1		12/27/16 13:10		
Foluene	ND ND	ug/L				12/27/16 13:10		
		ug/L	0.50	1				
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:10		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:10		
Frichloroethene	ND	ug/L	0.50	1		12/27/16 13:10		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 13:10		
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 13:10	75-01-4	
n&p-Xylene	ND	ug/L	2.0	1		12/27/16 13:10	179601-23-1	



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-P123	Lab ID: 2047	7713005	Collected: 12/19/1	6 14:21	Received: 1	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		12/27/16 13:1	0 95-47-6	
Dibromofluoromethane (S)	114	%.	72-126	1		12/27/16 13:1	0 1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		12/27/16 13:1	0 460-00-4	
Toluene-d8 (S)	102	%.	79-119	1		12/27/16 13:1	0 2037-26-5	
Sample: MW-P124	Lab ID: 204	7713006	Collected: 12/19/1	6 15:45	Received: 1	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	od: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	35		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	0 01/04/17 14:0	9	H2
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	12/27/16 11:20	0 01/04/17 14:0	9	H2
n-Pentacosane (S)	41	%.	16-137	1	12/27/16 11:20	01/04/17 14:0	9 629-99-2	
o-Terphenyl (S)	51	%.	10-121	1	12/27/16 11:20	0 01/04/17 14:0	9 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/29/16 04:4	5	
4-Bromofluorobenzene (S)	93	%.	44-148	1		12/29/16 04:4	5 460-00-4	
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	0.0018	mg/L	0.0010	1	12/27/16 07:44	4 01/03/17 14:2	3 7440-38-2	
Chromium	0.0032	mg/L	0.0010	1	12/27/16 07:44	4 01/03/17 14:2	3 7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:4	4 01/03/17 14:2	3 7439-92-1	
Vanadium	0.0079	mg/L	0.0050	1	12/27/16 07:44	4 01/03/17 14:2	3 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	0 01/03/17 16:4	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	0 01/03/17 16:4	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	0 01/03/17 16:4	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	0 01/03/17 16:4	0 7440-62-2	
7470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury	9.5	ug/L	0.20	1	12/29/16 09:5	7 12/29/16 17:3	2 7439-97-6	
7470 Mercury, Dissolved (LF)	•	od: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	1.5	ug/L	0.20	1	12/29/16 11:58	3 12/29/16 19:0	6 7439-97-6	
8270 MSSV PAH by SIM SEP			270 by SIM Preparati					
Acenaphthene	ND	ug/L	0.10	1		3 12/30/16 21:3		
Acenaphthylene	ND	ug/L	0.10	1		3 12/30/16 21:3		
Anthracene	ND	ug/L	0.10	1		3 12/30/16 21:3		
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	3 12/30/16 21:3	2 56-55-3	



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-P124	Lab ID: 2	2047713006	Collected: 12/19/	16 15:45	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical N	Method: EPA 82	270 by SIM Prepara	tion Meth	od: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	2 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:3	2 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:3	2 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:3	2 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:3	2 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:3	2 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:3	2 206-44-0	
Fluorene	ND	_	0.10	1	12/24/16 11:23	12/30/16 21:3	2 86-73-7	
ndeno(1,2,3-cd)pyrene	ND	-	0.10	1		12/30/16 21:3		
2-Methylnaphthalene	ND	J	0.10			12/30/16 21:3		
Naphthalene	ND	_	0.10			12/30/16 21:3		
Phenanthrene	ND	_	0.10			12/30/16 21:3		
Pyrene	ND	_	0.10	1		12/30/16 21:3		
Surrogates	110	ug/ L	0.10	•	,, .0 11.20	. 2,00,10 21.0	_ 120 00 0	
2-Fluorobiphenyl (S)	86	%.	25-150	1	12/24/16 11:23	12/30/16 21:3	2 321-60-8	
Ferphenyl-d14 (S)	90		25-150			12/30/16 21:3		
3260 MSV Low Level		Method: EPA 50						
				4		40/07/40 40:00	0 07 04 4	
Acetone	12.0		4.0			12/27/16 13:28		
Benzene	ND	0	0.50			12/27/16 13:28		
Bromodichloromethane	ND	J	0.50			12/27/16 13:28		
Bromoform	ND	0	0.50	1		12/27/16 13:28		
Bromomethane	ND	J	0.50	1		12/27/16 13:28		
2-Butanone (MEK)	ND	0	2.0			12/27/16 13:28		
Carbon disulfide	ND	0	1.0	1		12/27/16 13:28		L3
Carbon tetrachloride	ND	J	0.50	1		12/27/16 13:28		
Chlorobenzene	ND	0	0.50	1		12/27/16 13:28		
Chloroethane	ND	J	0.50	1		12/27/16 13:28		
Chloroform	ND		0.50			12/27/16 13:28		
Chloromethane	ND	ug/L	0.50	1		12/27/16 13:28	8 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 13:28	8 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 13:28	8 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 13:28	8 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 13:28	8 75-71-8	
,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:28	8 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:28	8 107-06-2	
I,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:28	8 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 13:28	8 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:28	8 156-60-5	
1,2-Dichloropropane	ND		0.50			12/27/16 13:28		
cis-1,3-Dichloropropene	ND	_	0.50			12/27/16 13:28		
rans-1,3-Dichloropropene	ND	J	0.50				8 10061-02-6	
Ethylbenzene	ND	Ū	0.50			12/27/16 13:28		
2-Hexanone	ND	Ū	1.0			12/27/16 13:28		
sopropylbenzene (Cumene)	ND	•	1.0			12/27/16 13:20		
Methyl acetate	ND ND		2.0			12/27/16 13:28		
VICTIVI ACCIAIC	שוא	uu/∟	2.0			12/21/10 13.20	J 13-20-3	



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-P124	Lab ID: 204	7713006	Collected: 12/19/1	6 15:45	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 13:28	3 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 13:28	3 1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 13:28	3 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 13:28	3 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 13:28	3 127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 13:28	3 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:28	3 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:28	3 79-00-5	
- Frichloroethene	ND	ug/L	0.50	1		12/27/16 13:28	3 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 13:28	3 75-69-4	
/inyl chloride	ND	ug/L	0.50	1		12/27/16 13:28		
m&p-Xylene	ND	ug/L	2.0	1			3 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 13:28		
Surrogates		3						
Dibromofluoromethane (S)	115	%.	72-126	1		12/27/16 13:28	1868-53-7	
1-Bromofluorobenzene (S)	99	%.	68-124	1		12/27/16 13:28	3 460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 13:28	3 2037-26-5	
Sample: MW-P121	Lab ID: 204	7713007	Collected: 12/19/1	6 16:27	Received: 12	2/20/16 16:15	Matrix: Water	
Sample: MW-P121 Parameters	Lab ID: 204	7713007 Units	Collected: 12/19/1	6 16:27 DF	Received: 12	2/20/16 16:15 Analyzed	Matrix: Water CAS No.	Qua
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed		Qua
Parameters 8015M DRO/ORO Organics	Results Analytical Meth	Units nod: EPA 80	Report Limit 015B Modified Prepa	DF ration M	Prepared ethod: EPA 3535	Analyzed	CAS No.	
Parameters 0015M DRO/ORO Organics Diesel Range Organic (C10-C28)	Results Analytical Meth	Units nod: EPA 80 mg/L	Report Limit 015B Modified Prepa 0.50	DF ration M	Prepared ethod: EPA 3535 12/27/16 11:20	Analyzed 5 01/04/17 14:37	CAS No.	H2
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates	Results Analytical Methods ND ND	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF ration M 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20	Analyzed 01/04/17 14:37 01/04/17 14:37	CAS No.	
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S)	Results Analytical Methods ND ND 42	Units nod: EPA 80 mg/L mg/L %.	Report Limit 015B Modified Prepa 0.50 1.0	DF ration M 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20	Analyzed 01/04/17 14:33 01/04/17 14:33	CAS No.	H2
Parameters 015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates -Pentacosane (S)	Results Analytical Methods ND ND	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF ration M 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20	Analyzed 01/04/17 14:33 01/04/17 14:33	CAS No.	H2
Parameters 0015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S)	Results Analytical Methods ND ND 42	Units nod: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20	Analyzed 01/04/17 14:33 01/04/17 14:33	CAS No.	H2
Parameters Bo15M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) Bo21 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	Results Analytical Methods ND ND 42 41	Units nod: EPA 80 mg/L mg/L %. %.	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121	DF ration M 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20	Analyzed 01/04/17 14:33 01/04/17 14:33	CAS No.	H2
Parameters B015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	Analytical Meth ND ND 42 41 Analytical Meth	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80	Report Limit	DF ration M 1 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20	Analyzed 01/04/17 14:37 01/04/17 14:37 01/04/17 14:37	CAS No.	H2
Parameters 8015M DRO/ORO Organics Diesel Range Organics (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates n-Bromofluorobenzene (S)	Results Analytical Method ND ND 42 41 Analytical Method ND 92	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0	DF ration M 1 1 1 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20	Analyzed 01/04/17 14:37 01/04/17 14:37 01/04/17 14:37 12/29/16 05:12	CAS No.	H2
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) 3021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 5020 MET ICPMS	Results Analytical Method ND ND 42 41 Analytical Method ND 92	Units nod: EPA 80 mg/L mg/L %. %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0 44-148	DF ration M 1 1 1 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20	Analyzed 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 12/29/16 05:12	CAS No. 7 629-99-2 7 84-15-1	H2
Parameters 3015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 2-Terphenyl (S) 3021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 3020 MET ICPMS Arsenic	Analytical Method ND ND 42 41 Analytical Method ND 92 Analytical Method ND ND ND ND ND ND ND ND ND ND ND ND ND	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth	DF ration M 1 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20	Analyzed 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 12/29/16 05:12 12/29/16 05:12	CAS No. 7 629-99-2 7 84-15-1 2 460-00-4 7 7440-38-2	H2
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 1-Bromofluorobenzene (S) 8020 MET ICPMS Arsenic Chromium	Results Analytical Method ND ND 42 41 Analytical Method ND 92 Analytical Method 0.0034	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methods 0.0010	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 4 3010 12/27/16 07:44	Analyzed 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 12/29/16 05:12 12/29/16 05:12 01/03/17 14:34 01/03/17 14:34	CAS No. 7 629-99-2 7 84-15-1 2 460-00-4 7440-38-2 7440-47-3	H2
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates 1-Pentacosane (S) 1-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates 1-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium Lead	Results Analytical Method ND 42 41 Analytical Method ND 92 Analytical Method 0.0034 0.058	Units mg/L mg/L %. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 4 3010 12/27/16 07:44 12/27/16 07:44	Analyzed 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 12/29/16 05:12 12/29/16 05:12 01/03/17 14:34 01/03/17 14:34 01/03/17 14:34	CAS No. 7 629-99-2 7 84-15-1 2 460-00-4 4 7440-38-2 4 7440-47-3 7 7439-92-1	H2
Parameters 2015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) 2021 GCV BTEX, MTBE, GRO Casoline Range Organics Currogates D-Bromofluorobenzene (S) 2020 MET ICPMS Arsenic Chromium Dead Dead of the control of	Analytical Meth ND ND 42 41 Analytical Meth ND 92 Analytical Meth 0.0034 0.058 0.012 0.12	Units mg/L mg/L %. nod: EPA 86 ug/L %. nod: EPA 66 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0010	DF ration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 A 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	Analyzed 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 12/29/16 05:12 12/29/16 05:12 01/03/17 14:34 01/03/17 14:34 01/03/17 14:34	CAS No. 7 629-99-2 7 84-15-1 2 460-00-4 4 7440-38-2 4 7440-47-3 7 7439-92-1	H2
Parameters Bo15M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) Bo21 GCV BTEX, MTBE, GRO Basoline Range Organics Surrogates D-Bromofluorobenzene (S) Bo20 MET ICPMS Arsenic Chromium Lead Janadium Bo20 MET ICPMS, Dissolved (LF)	Analytical Method ND ND 42 41 Analytical Method ND 92 Analytical Method 0.0034 0.058 0.012 0.12 Analytical Method ND ND ND ND ND ND ND ND ND ND ND ND ND	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth	DF ration M 1 1 1 1 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 4 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	Analyzed 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 12/29/16 05:12 12/29/16 05:12 01/03/17 14:34 01/03/17 14:34 01/03/17 14:34	CAS No. 7 629-99-2 7 84-15-1 2 460-00-4 4 7440-38-2 4 7440-47-3 7 7439-92-1 7 7440-62-2	H2
Parameters Bo15M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates Di-Pentacosane (S) D-Terphenyl (S) Bo21 GCV BTEX, MTBE, GRO Basoline Range Organics Surrogates B-Bromofluorobenzene (S) Bo20 MET ICPMS Arsenic Chromium Lead Janadium Bo20 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Results Analytical Method ND 42 41 Analytical Method ND 92 Analytical Method 0.0034 0.058 0.012 0.12 Analytical Method	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60 ug/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth 1.0	DF ration M 1 1 1 1 1 1 1 1 1 nod: EPA 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 4 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	Analyzed 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 12/29/16 05:12 12/29/16 05:12 01/03/17 14:34 01/03/17 14:34 01/03/17 14:34	CAS No. 7 629-99-2 7 84-15-1 2 460-00-4 4 7440-38-2 4 7440-47-3 7 7439-92-1 7 7440-62-2 4 7440-38-2	H2
Parameters B015M DRO/ORO Organics Diesel Range Organic (C10-C28) Dil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) D-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Gasoline Range Organics	Analytical Method ND ND 42 41 Analytical Method ND 92 Analytical Method 0.0034 0.058 0.012 0.12 Analytical Method ND ND ND ND ND ND ND ND ND ND ND ND ND	Units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L hod: EPA 60	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meth 0.0010 0.0010 0.0050 0.20 Preparation Meth	DF ration M 1 1 1 1 1 1 1 1 1 nod: EPA	Prepared ethod: EPA 3535 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 4 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	Analyzed 01/04/17 14:33 01/04/17 14:33 01/04/17 14:33 12/29/16 05:12 12/29/16 05:12 01/03/17 14:34 01/03/17 14:34 01/03/17 14:34 01/03/17 16:44 01/03/17 16:44	CAS No. 7 629-99-2 7 84-15-1 2 460-00-4 4 7440-38-2 4 7440-62-2 4 7440-38-2 7 7440-38-2 7 7440-38-2 7 7440-38-2 7 7440-38-2	H2

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Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Sample: MW-P121	Lab ID: 204	7713007	Collected: 12/19/1	6 16:27	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	\ 7470			
Mercury	0.62	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:3	4 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	od: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:0	8 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:5	2 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:5	2 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:5	2 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:5	2 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23		-	
Chrysene	ND	-	0.10	1	12/24/16 11:23			
•		ug/L						
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23			
luoranthene	ND	ug/L	0.10	1	12/24/16 11:23			
luorene	ND	ug/L	0.10	1	12/24/16 11:23			
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23			
-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23			
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:5	2 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:5	2 85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:5	2 129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	57	%.	25-150	1	12/24/16 11:23	12/30/16 21:5	2 321-60-8	
erphenyl-d14 (S)	69	%.	25-150	1	12/24/16 11:23	12/30/16 21:5	2 1718-51-0	
2260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
cetone	11.8	ug/L	4.0	1		12/27/16 13:4	6 67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 13:4		
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 13:4	6 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 13:4	6 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 13:4	6 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 13:4	6 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 13:4	6 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 13:4		
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 13:4		
Chloroethane	ND	ug/L	0.50	1		12/27/16 13:4		
Chloroform	ND	ug/L	0.50	1		12/27/16 13:4		
Chloromethane	ND	ug/L	0.50	1		12/27/16 13:4		
1,2-Dibromo-3-chloropropane	ND ND	ug/L ug/L	0.20	1		12/27/16 13:4		
Dibromochloromethane		_						
	ND ND	ug/L	0.50	1		12/27/16 13:4		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 13:4		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 13:4		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:4		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:4	6 107-06-2	

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Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-P121	Lab ID: 204	7713007	Collected: 12/19/1	6 16:27	Received:	12/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:4	6 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 13:4	6 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:4	6 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 13:4	6 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 13:4	6 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 13:4	6 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 13:4	6 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 13:4	6 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 13:4	6 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 13:4	6 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 13:4	6 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 13:4		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 13:4		
Styrene	ND	ug/L	1.0	1		12/27/16 13:4		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 13:4		
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 13:4		
Toluene	ND	ug/L	0.50	1		12/27/16 13:4		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:4		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:4		
Trichloroethene	1.7	ug/L	0.50	1		12/27/16 13:4		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 13:4		
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 13:4		
m&p-Xylene	ND ND	ug/L	2.0	1			6 179601-23-1	
o-Xylene	ND ND	ug/L	1.0	1		12/27/16 13:4		
Surrogates	ND	ug/L	1.0	'		12/21/10 13.4	0 93-47-0	
Dibromofluoromethane (S)	113	%.	72-126	1		12/27/16 13:4	6 1868-53-7	
4-Bromofluorobenzene (S)	101	%.	68-124	1		12/27/16 13:4		
Toluene-d8 (S)	102	%.	79-119	1		12/27/16 13:4		
Sample: FB-121916	Lab ID: 204	7713008	Collected: 12/19/1	6 16:45	Received:	12/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
B021 GCV BTEX, MTBE, GRO	— — — — Analytical Meth	nod: FPA 80			· · ·			-
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 05:3	8	
Surrogates		•						
4-Bromofluorobenzene (S)	93	%.	44-148	1		12/29/16 05:3	0 400-00-4	
3260 MSV Low Level	Analytical Meth					40/07/10 11:5	4 07 0 : :	
Acetone	78.0	ug/L	4.0	1		12/27/16 14:0		
Benzene	ND	ug/L	0.50	1		12/27/16 14:0		
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 14:0		
Bromoform	ND	ug/L	0.50	1		12/27/16 14:0		
Bromomethane	ND	ug/L	0.50	1		12/27/16 14:0		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 14:0	4 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 14:0	1 7E 1E O	L3

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Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: FB-121916	Lab ID:	2047713008	Collected: 12/19/	16 16:45	Received:	12/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3260 MSV Low Level	Analytical	Method: EPA 50	030B/8260					
Carbon tetrachloride	NE	ug/L	0.50	1		12/27/16 14:04	4 56-23-5	
Chlorobenzene	NE) ug/L	0.50	1		12/27/16 14:04	4 108-90-7	
Chloroethane	NE	ug/L	0.50	1		12/27/16 14:04	4 75-00-3	
Chloroform	NE	ug/L	0.50	1		12/27/16 14:04	4 67-66-3	
Chloromethane	NE	ug/L	0.50	1		12/27/16 14:04	4 74-87-3	
1,2-Dibromo-3-chloropropane	NE	ug/L	0.20	1		12/27/16 14:04	4 96-12-8	
Dibromochloromethane	NE	_	0.50	1		12/27/16 14:04	4 124-48-1	
1,2-Dibromoethane (EDB)	NE	ug/L	1.0	1		12/27/16 14:04	4 106-93-4	
Dichlorodifluoromethane	NE	•	1.0	1		12/27/16 14:04		
1,1-Dichloroethane	NE	Ū	0.50	1		12/27/16 14:04		
1,2-Dichloroethane	NE		0.50	1		12/27/16 14:04		
1,1-Dichloroethene	NE	_	0.50	1		12/27/16 14:04		
cis-1,2-Dichloroethene	NE	0	1.0	1		12/27/16 14:04		
trans-1,2-Dichloroethene	NE	Ū	0.50	1		12/27/16 14:04		
1,2-Dichloropropane	NE	_	0.50	1		12/27/16 14:04		
cis-1,3-Dichloropropene	NE	_	0.50	1		12/27/16 14:04		
trans-1,3-Dichloropropene	NE NE	_	0.50	1		12/27/16 14:04		
	NE NE	Ū	0.50	1		12/27/16 14:04		
Ethylbenzene		•		1				
2-Hexanone	NE	•	1.0			12/27/16 14:04		
sopropylbenzene (Cumene)	NE	0	1.0	1		12/27/16 14:04		
Methyl acetate	NE	0	2.0	1		12/27/16 14:04		
Methylene Chloride	NE	J	0.50	1		12/27/16 14:04		
4-Methyl-2-pentanone (MIBK)	NE	•	1.0	1		12/27/16 14:04		
Methyl-tert-butyl ether	NE	0	0.50	1		12/27/16 14:04		
Styrene	NE	0	1.0	1		12/27/16 14:04		
1,1,2,2-Tetrachloroethane	NE	0	0.50	1		12/27/16 14:04		
Tetrachloroethene	NE	J	0.50	1		12/27/16 14:04		
Toluene	NE	•	0.50	1		12/27/16 14:04		
1,1,1-Trichloroethane	NE	•	0.50	1		12/27/16 14:04	4 71-55-6	
1,1,2-Trichloroethane	NE) ug/L	0.50	1		12/27/16 14:04	4 79-00-5	
Trichloroethene	NE) ug/L	0.50	1		12/27/16 14:04	4 79-01-6	
Trichlorofluoromethane	NE) ug/L	0.50	1		12/27/16 14:04	4 75-69-4	
Vinyl chloride	NE) ug/L	0.50	1		12/27/16 14:04	4 75-01-4	
m&p-Xylene	NE) ug/L	2.0	1		12/27/16 14:04	4 179601-23-1	
o-Xylene	NE	ug/L	1.0	1		12/27/16 14:04	4 95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	4 %.	72-126	1		12/27/16 14:04	4 1868-53-7	
4-Bromofluorobenzene (S)	97	7 %.	68-124	1		12/27/16 14:04	4 460-00-4	
Toluene-d8 (S)	101	1 %.	79-119	1		12/27/16 14:04	4 2037-26-5	
Sample: TB-122016	Lab ID:	2047713009	Collected: 12/20/	16 00:00	Received:	12/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical	Method: EPA 80	015/8021			,		
• •	•							



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: TB-122016	Lab ID: 204	7713009	Collected: 12/20/1	6 00:00	Received:	12/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Surrogates 4-Bromofluorobenzene (S)	95	%.	44-148	1		12/29/16 06:04	1 460-00-4	
8260 MSV Low Level	Analytical Meth			•		12/20/10 00:0-	1 400 00 4	
	74.3			1		12/27/16 14:22	0 67 64 1	
Acetone		ug/L	4.0	1 1		12/27/16 14:22		
Benzene Bramadiahlaramathana	ND	ug/L	0.50				_	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 14:22		
Bromoform	ND	ug/L	0.50	1		12/27/16 14:22		
Bromomethane	ND	ug/L	0.50	1		12/27/16 14:22		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 14:22		
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 14:22		L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 14:22	2 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 14:22	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 14:22	2 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 14:22	2 67-66-3	
Chloromethane	0.75	ug/L	0.50	1		12/27/16 14:22	2 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 14:22	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 14:22	2 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 14:22	2 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 14:22	2 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:22		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:22		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:22		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 14:22		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:22		
	ND	-	0.50	1		12/27/16 14:22		
1,2-Dichloropropane		ug/L						
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:22		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:22		
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 14:22		
2-Hexanone	1.9	ug/L	1.0	1		12/27/16 14:22		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 14:22		
Methyl acetate	ND	ug/L	2.0	1		12/27/16 14:22		
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 14:22	2 75-09-2	
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 14:22	2 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 14:22	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 14:22	2 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 14:22	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 14:22	2 127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 14:22	2 108-88-3	
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:22		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:22		
Frichloroethene	ND	ug/L	0.50	1		12/27/16 14:22		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 14:22		
/inyl chloride	ND	ug/L	0.50	1		12/27/16 14:22		
n&p-Xylene	ND	ug/L	2.0	1		12/27/16 14:22		
o-Xylene	ND ND	ug/L ug/L	1.0	1		12/27/16 14:22		



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: TB-122016	Lab ID:	2047713009	Collected: 12/20/1	6 00:00	Received: 1	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
260 MSV Low Level	Analytical I	Method: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	114		72-126	1		12/27/16 14:22		
1-Bromofluorobenzene (S)	99		68-124	1		12/27/16 14:22	2 460-00-4	
oluene-d8 (S)	103	%.	79-119	1		12/27/16 14:22	2 2037-26-5	
Sample: EB-122016	Lab ID:	2047713010	Collected: 12/20/1	6 08:33	Received: 1	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
015M DRO/ORO Organics	Analytical I	Method: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	35		
Diesel Range Organic (C10-C28)	ND) mg/L	0.50	1	12/27/16 11:20	01/04/17 15:05	5	
Dil Range Organics (>C28-C40) Surrogates	ND	ŭ	1.0	1		0 01/04/17 15:05		
n-Pentacosane (S)	40	%.	16-137	1	12/27/16 11:20	01/04/17 15:05	629-99-2	
-Terphenyl (S)	48	%.	10-121	1	12/27/16 11:20	01/04/17 15:05	5 84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical I	Method: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 08:14	1	
l-Bromofluorobenzene (S)	90	%.	44-148	1		12/29/16 08:14	460-00-4	
020 MET ICPMS	Analytical I	Method: EPA 60	020 Preparation Met	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	4 01/03/17 14:38	3 7440-38-2	
Chromium	0.0021	mg/L	0.0010	1	12/27/16 07:44	4 01/03/17 14:38	3 7440-47-3	
ead	ND	mg/L	0.0010	1	12/27/16 07:44	4 01/03/17 14:38	3 7439-92-1	
/anadium	ND) mg/L	0.0050	1	12/27/16 07:44	4 01/03/17 14:38	3 7440-62-2	
020 MET ICPMS, Dissolved (LF)	Analytical I	Method: EPA 60	020 Preparation Met	nod: EPA	3005A			
arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:56	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:56	7440-47-3	
ead, Dissolved	ND		1.0	1	12/30/16 06:50	01/03/17 16:56	7439-92-1	
anadium, Dissolved	ND		5.0	1	12/30/16 06:50	0 01/03/17 16:56	7440-62-2	
470 Mercury	Analytical I	Method: EPA 74	470 Preparation Met	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	7 12/29/16 17:36	7439-97-6	
470 Mercury, Dissolved (LF)	Analytical I	Method: EPA 74	470 Preparation Met	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	3 12/29/16 19:10	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical I	Method: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
cenaphthene	ND	ug/L	0.10	1		3 12/30/16 22:12		
cenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	3 12/30/16 22:12	2 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	3 12/30/16 22:12	2 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	3 12/30/16 22:12	2 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	3 12/30/16 22:12	50-32-8	

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: EB-122016	Lab ID: 204	7713010	Collected: 12/20/1	16 08:33	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparati	ion Meth	od: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	2 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	2 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	2 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	2 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	2 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	2 206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	2 86-73-7	
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	2 193-39-5	
-Methylnaphthalene	ND	ug/L	0.10	1		12/30/16 22:12		
laphthalene	ND	ug/L	0.10	1		12/30/16 22:12		
Phenanthrene	ND	ug/L	0.10	1		12/30/16 22:12		
Pyrene	ND	ug/L	0.10	1		12/30/16 22:12		
Surrogates	140	ug/L	0.10	•	12/27/10 11.20	12,00,10 22.12	120 00 0	
2-Fluorobiphenyl (S)	74	%.	25-150	1	12/24/16 11:23	12/30/16 22:12	321-60-8	
erphenyl-d14 (S)	84	%.	25-150	1		12/30/16 22:12		
3260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
cetone	92.2	ug/L	4.0	1		12/27/16 14:40	0 67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 14:40		
Bromodichloromethane	ND ND	ug/L ug/L	0.50	1		12/27/16 14:40		
Bromoform	ND		0.50	1		12/27/16 14:40		
	ND ND	ug/L	0.50	1		12/27/16 14:40		
Bromomethane		ug/L		1				
-Butanone (MEK)	ND	ug/L	2.0			12/27/16 14:40		1.0
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 14:40		L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 14:40		
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 14:40		
Chloroethane	ND	ug/L	0.50	1		12/27/16 14:40		
Chloroform	ND	ug/L	0.50	1		12/27/16 14:40		
Chloromethane	1.2	ug/L	0.50	1		12/27/16 14:40		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 14:40		
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 14:40	-	
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 14:40		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 14:40		
,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:40		
,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:40		
,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:40		
is-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 14:40		
ans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:40	156-60-5	
,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 14:40		
is-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:40	10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:40	10061-02-6	
thylbenzene	ND	ug/L	0.50	1		12/27/16 14:40	100-41-4	
-Hexanone	ND	ug/L	1.0	1		12/27/16 14:40	591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 14:40	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 14:40	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 14:40		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 14:40		



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: EB-122016	Lab ID: 204	7713010	Collected: 12/20/1	6 08:33	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	30B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 14:40	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 14:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 14:40	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 14:40	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 14:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:40		
Trichloroethene	ND	ug/L	0.50	1		12/27/16 14:40		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 14:40		
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 14:40		
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 14:40		
o-Xylene	ND	ug/L	1.0	1		12/27/16 14:40		
Surrogates	ND	ug/ L	1.0	•		12/2//10 14.40	00 47 0	
Dibromofluoromethane (S)	114	%.	72-126	1		12/27/16 14:40	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		12/27/16 14:40		
Toluene-d8 (S)	100	%.	79-119	1		12/27/16 14:40		
		,		•				
Sample: MW-P119	Lab ID: 204	7713011	Collected: 12/20/1	6 09:18	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration Mo	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 15:34	l	
Oil Range Organics (>C28-C40)		mg/ L	0.00		12/21/10 11.20	01/04/11 10.04		
	ND	ma/l	1.0	1	12/27/16 11:20	01/04/17 15:3/		
	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 15:34		
Surrogates								
Surrogates n-Pentacosane (S)	54	%.	16-137	1	12/27/16 11:20	01/04/17 15:34	629-99-2	
Surrogates n-Pentacosane (S) o-Terphenyl (S)	54 61	%. %.	16-137 10-121		12/27/16 11:20		629-99-2	
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO	54 61 Analytical Meth	%. %. nod: EPA 80	16-137 10-121 115/8021	1 1	12/27/16 11:20	01/04/17 15:34 01/04/17 15:34	629-99-2 84-15-1	
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	54 61	%. %.	16-137 10-121	1	12/27/16 11:20	01/04/17 15:34	629-99-2 84-15-1	
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	54 61 Analytical Meth	%. %. nod: EPA 80	16-137 10-121 115/8021	1 1	12/27/16 11:20	01/04/17 15:34 01/04/17 15:34	629-99-2 84-15-1	
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	54 61 Analytical Meth ND 91	%. %. nod: EPA 80 ug/L %.	16-137 10-121 015/8021 50.0	1 1 1	12/27/16 11:20 12/27/16 11:20	01/04/17 15:34 01/04/17 15:34 12/29/16 08:41	629-99-2 84-15-1	
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS	54 61 Analytical Meth ND 91	%. %. nod: EPA 80 ug/L %.	16-137 10-121 015/8021 50.0 44-148	1 1 1 1 nod: EPA	12/27/16 11:20 12/27/16 11:20	01/04/17 15:34 01/04/17 15:34 12/29/16 08:41 12/29/16 08:41	629-99-2 84-15-1 460-00-4	
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic	54 61 Analytical Meth ND 91 Analytical Meth	%. %. nod: EPA 80 ug/L %.	16-137 10-121 015/8021 50.0 44-148 020 Preparation Metl	1 1 1 1 nod: EPA	12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44	01/04/17 15:34 01/04/17 15:34 12/29/16 08:41 12/29/16 08:41	629-99-2 84-15-1 460-00-4	
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium	54 61 Analytical Meth ND 91 Analytical Meth	%. %. mod: EPA 80 ug/L %. mod: EPA 60 mg/L mg/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Methol	1 1 1 1 nod: EPA	12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44	01/04/17 15:34 01/04/17 15:34 12/29/16 08:41 12/29/16 08:41 01/03/17 14:42	629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3	
Surrogates n-Pentacosane (S) n-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead	54 61 Analytical Meth ND 91 Analytical Meth ND ND	%. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010	1 1 1 1 nod: EPA 1	12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	01/04/17 15:34 01/04/17 15:34 12/29/16 08:41 12/29/16 08:41 01/03/17 14:42 01/03/17 14:42	629-99-2 84-15-1 460-00-4 2 7440-38-2 2 7440-47-3 3 7439-92-1	
Surrogates n-Pentacosane (S) n-Pentacosane (S) n-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium	54 61 Analytical Meth ND 91 Analytical Meth ND ND ND ND	%. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L	16-137 10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010	1 1 1 1 nod: EPA 1 1 1	12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	01/04/17 15:34 01/04/17 15:34 12/29/16 08:41 12/29/16 08:41 01/03/17 14:42 01/03/17 14:42 01/03/17 14:42	629-99-2 84-15-1 460-00-4 2 7440-38-2 2 7440-47-3 3 7439-92-1	
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	54 61 Analytical Meth ND 91 Analytical Meth ND ND ND ND ND ND ND ND Analytical Meth	%. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L mg/L mg/L	16-137 10-121 115/8021 50.0 44-148 120 Preparation Meth 0.0010 0.0010 0.0050 120 Preparation Meth	1 1 1 1 nod: EPA 1 1 1	12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	01/04/17 15:34 01/04/17 15:34 12/29/16 08:41 12/29/16 08:41 01/03/17 14:42 01/03/17 14:42 01/03/17 14:42	629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	54 61 Analytical Meth ND 91 Analytical Meth ND ND ND ND ND ND ND ND Analytical Meth ND	%. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L od: EPA 60 ug/L	16-137 10-121 115/8021 50.0 44-148 120 Preparation Metl 0.0010 0.0010 0.0050 120 Preparation Metl 1.0	1 1 1 1 1 1 1 1 1 nod: EPA 1	12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 3005A 12/30/16 06:50	01/04/17 15:34 01/04/17 15:34 12/29/16 08:41 12/29/16 08:41 01/03/17 14:42 01/03/17 14:42 01/03/17 14:42 01/03/17 14:42	629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7440-62-2 7440-62-2	
Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	54 61 Analytical Meth ND 91 Analytical Meth ND ND ND ND ND ND ND ND Analytical Meth	%. %. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L mg/L mg/L	16-137 10-121 115/8021 50.0 44-148 120 Preparation Meth 0.0010 0.0010 0.0050 120 Preparation Meth	1 1 1 1 1 1 1 1 1 1 nod: EPA	12/27/16 11:20 12/27/16 11:20 12/27/16 11:20 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 3005A 12/30/16 06:50 12/30/16 06:50	01/04/17 15:34 01/04/17 15:34 12/29/16 08:41 12/29/16 08:41 01/03/17 14:42 01/03/17 14:42 01/03/17 14:42	460-00-4 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2 7440-38-2 7440-47-3	



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Sample: MW-P119	Lab ID: 2047	7713011	Collected: 12/20/16	09:18	Received: 12	/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Metho	od: EPA	7470	•	•	
Mercury	0.23	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:4	2 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	470 Preparation Metho	od: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:1	2 7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparatio	n Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:3	2 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:3	2 208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:3	2 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:3	2 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:3	2 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23			
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23			
luoranthene	ND	ug/L	0.10	1	12/24/16 11:23			
luorene	ND	ug/L	0.10	1	12/24/16 11:23			
	ND	-	0.10	1	12/24/16 11:23			
ndeno(1,2,3-cd)pyrene -Methylnaphthalene	ND ND	ug/L	0.10	1	12/24/16 11:23			
• •		ug/L						
laphthalene	ND	ug/L	0.10	1	12/24/16 11:23			
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23			
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:3	2 129-00-0	
Surrogates	48	%.	25-150	1	12/24/16 11:23	10/20/16 20:2	221 60 9	
2-Fluorobiphenyl (S)								
erphenyl-d14 (S)	71	%.	25-150	1	12/24/16 11:23	12/30/16 22:3	2 1/18-51-0	
3260 MSV Low Level	Analytical Meth							
acetone	19.5	ug/L	4.0	1		12/27/16 14:5	8 67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 14:5		
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 14:5	8 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 14:5	8 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 14:5	8 74-83-9	
P-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 14:5	8 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 14:5	8 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 14:5	8 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 14:5	8 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 14:5	8 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 14:5	8 67-66-3	
Chloromethane	0.65	ug/L	0.50	1		12/27/16 14:5	8 74-87-3	
,2-Dibromo-3-chloropropane	0.20	ug/L	0.20	1		12/27/16 14:5		
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 14:5		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 14:5		
• ,	ND	ua/l	1.0	1		12/27/16 14:5	8 75-71-8	
Dichlorodifluoromethane	ND ND	ug/L ug/L	1.0 0.50	1 1		12/27/16 14:58 12/27/16 14:58		

REPORT OF LABORATORY ANALYSIS

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Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-P119	Lab ID: 204	7713011	Collected: 12/20/1	6 09:18	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:58	8 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 14:58	8 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:58	8 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 14:58	8 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:58	8 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:58	8 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 14:58	8 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 14:58	8 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 14:58	8 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 14:58	8 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 14:58		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 14:58		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 14:58		
Styrene	ND	ug/L	1.0	1		12/27/16 14:56		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 14:58		
Tetrachloroethene	ND ND	ug/L	0.50	1		12/27/16 14:56		
Toluene	ND ND	ug/L ug/L	0.50	1		12/27/16 14:58		
1,1,1-Trichloroethane	ND ND	-	0.50	1		12/27/16 14:58		
1,1,2-Trichloroethane		ug/L						
· ·	ND	ug/L	0.50	1		12/27/16 14:58		
Trichloroethene	7.4	ug/L	0.50	1		12/27/16 14:58		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 14:58		
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 14:58		
m&p-Xylene	ND	ug/L	2.0	1			8 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 14:58	8 95-47-6	
Surrogates	44.4	0.4	70.400			10/07/10 11 5	= . =	
Dibromofluoromethane (S)	114	%.	72-126	1		12/27/16 14:58		
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/27/16 14:58		
Toluene-d8 (S)	102	%.	79-119	1		12/27/16 14:58	8 2037-26-5	
Sample: MW-P118	Lab ID: 204	7713012	Collected: 12/20/1	6 10:09	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	D15B Modified Prepa	ration M	ethod: EPA 353	 5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 16:02	2	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/04/17 16:02		
Surrogates		······································		-		3		
n-Pentacosane (S)	43	%.	16-137	1	12/27/16 11:20	01/04/17 16:02	2 629-99-2	
o-Terphenyl (S)	49	%.	10-121	1		01/04/17 16:02		
8021 GCV BTEX, MTBE, GRO	Analytical Meth							
Gasoline Range Organics	68.2	ug/L	50.0	1		12/29/16 09:0	7	
Surrogates		~9 [,] =	33.0	•		, _ 0, 10 00.0	-	
Surrogates								



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-P118	Lab ID: 204	7713012	Collected:	12/20/16	5 10:09	Received: 1	2/20/16 16:15 I	Matrix: Water	
Parameters	Results	Units	Report	Limit	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparati	on Meth	od: EPA	3010			
Arsenic	ND	mg/L	0	0.0010	1	12/27/16 07:44	1 01/03/17 14:46	7440-38-2	
Chromium	0.0011	mg/L	0	0.0010	1	12/27/16 07:44	1 01/03/17 14:46	7440-47-3	
Lead	ND	mg/L	0	0.0010	1	12/27/16 07:44	1 01/03/17 14:46	7439-92-1	
Vanadium	ND	mg/L	0	0.0050	1	12/27/16 07:44	4 01/03/17 14:46	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparati	on Meth	od: EPA	3005A			
Arsenic, Dissolved	ND	ug/L		1.0	1	12/30/16 06:50	0 01/03/17 18:42	2 7440-38-2	
Chromium, Dissolved	1.0	ug/L		1.0	1	12/30/16 06:50	01/03/17 18:42	2 7440-47-3	
Lead, Dissolved	ND	ug/L		1.0	1	12/30/16 06:50	01/03/17 18:42	2 7439-92-1	
Vanadium, Dissolved	ND	ug/L		5.0	1		01/03/17 18:42		
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparati	on Meth	od: EPA	7470			
Mercury	1.7	ug/L		0.20	1	12/29/16 09:57	7 12/29/16 17:44	1 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	470 Preparati	on Meth	od: EPA	7470			
Mercury, Dissolved	ND	ug/L		0.20	1	12/29/16 11:58	3 12/29/16 19:14	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM P	reparatio	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L		0.10	1	12/24/16 11:23	3 12/30/16 22:52	2 83-32-9	
Acenaphthylene	ND	ug/L		0.10	1	12/24/16 11:23	3 12/30/16 22:52	2 208-96-8	
Anthracene	ND	ug/L		0.10	1	12/24/16 11:23	3 12/30/16 22:52	2 120-12-7	
Benzo(a)anthracene	ND	ug/L		0.10	1	12/24/16 11:23	3 12/30/16 22:52	2 56-55-3	
Benzo(a)pyrene	ND	ug/L		0.10	1	12/24/16 11:23	3 12/30/16 22:52	2 50-32-8	
Benzo(b)fluoranthene	ND	ug/L		0.10	1	12/24/16 11:23	3 12/30/16 22:52	2 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L		0.10	1	12/24/16 11:23	3 12/30/16 22:52	2 191-24-2	
Benzo(k)fluoranthene	ND	ug/L		0.10	1	12/24/16 11:23	3 12/30/16 22:52	2 207-08-9	
Chrysene	ND	ug/L		0.10	1	12/24/16 11:23	3 12/30/16 22:52	2 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L		0.10	1		3 12/30/16 22:52		
Fluoranthene	ND	ug/L		0.10	1		3 12/30/16 22:52		
Fluorene	ND	ug/L		0.10	1		3 12/30/16 22:52		
ndeno(1,2,3-cd)pyrene	ND	ug/L		0.10	1		3 12/30/16 22:52		
2-Methylnaphthalene	ND	ug/L		0.10	1		3 12/30/16 22:52		
Naphthalene	ND	ug/L		0.10	1		3 12/30/16 22:52 3 12/30/16 22:52		
Phenanthrene	ND	ug/L		0.10	1		3 12/30/16 22:52		
_		·			1				
Pyrene Surrogates	ND	ug/L		0.10	•	12/24/10 11.20	3 12/30/16 22:52	123-00-0	
2-Fluorobiphenyl (S)	73	%.	2	25-150	1	12/24/16 11:23	3 12/30/16 22:52	321-60-8	
Terphenyl-d14 (S)	84	%.		25-150	1		3 12/30/16 22:52 3 12/30/16 22:52		
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260						
Acetone	15.6	ug/L		4.0	1		12/27/16 15:16	S 67 - 64-1	
Benzene	ND	_		0.50	1		12/27/16 15:16		
		ug/L							
Bromodichloromethane	ND	ug/L		0.50	1		12/27/16 15:16		
Bromoform	ND	ug/L		0.50	1		12/27/16 15:16		
Bromomethane	ND	ug/L		0.50	1		12/27/16 15:16		
2-Butanone (MEK)	ND	ug/L		2.0	1		12/27/16 15:16	6 78-93-3	



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-P118	Lab ID: 204	7713012	Collected: 12/20/1	6 10:09	Received:	12/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 15:1	6 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 15:1	6 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 15:1	6 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 15:1	6 75-00-3	
Chloroform	0.56	ug/L	0.50	1		12/27/16 15:1	6 67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 15:1	6 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 15:1	6 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 15:1	6 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 15:1	6 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 15:1	6 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 15:1	6 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 15:1	6 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:1	6 75-35-4	
cis-1,2-Dichloroethene	8.0	ug/L	1.0	1		12/27/16 15:1	6 156-59-2	
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:1	6 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 15:1	6 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:1	6 10061-01-5	
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:1	6 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 15:1	6 100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 15:1	6 591-78-6	
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 15:1	6 98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 15:1	6 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 15:1	6 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 15:1	6 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 15:1	6 1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 15:1	6 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 15:1	6 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 15:1	6 127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 15:1	6 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:1	6 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:1	6 79-00-5	
Trichloroethene	72.3	ug/L	0.50	1		12/27/16 15:1	6 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 15:1	6 75-69-4	
Vinyl chloride	0.51	ug/L	0.50	1		12/27/16 15:1	6 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 15:1	6 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 15:1	6 95-47-6	
Surrogates		-						
Dibromofluoromethane (S)	114	%.	72-126	1		12/27/16 15:1	6 1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/27/16 15:1	6 460-00-4	
Toluene-d8 (S)	98	%.	79-119	1		12/27/16 15:1	6 2037-26-5	



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Sample: MW-83A	Lab ID: 204	7713013	Collected: 12/20/1	6 11:13	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration M	ethod: EPA 3535	5	•	
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 16:30)	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 16:30)	
n-Pentacosane (S)	62	%.	16-137	1	12/27/16 11:20	01/04/17 16:30	629-99-2	
p-Terphenyl (S)	57	%.	10-121	1	12/27/16 11:20	01/04/17 16:30	84-15-1	
3021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	15/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/29/16 09:33	3	
4-Bromofluorobenzene (S)	91	%.	44-148	1		12/29/16 09:33	3 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:50	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:50	7440-47-3	
_ead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:50	7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:50	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:46	3440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/03/17 18:46		
•		_		1				
Lead, Dissolved /anadium, Dissolved	ND ND	ug/L ug/L	1.0 5.0	1		01/03/17 18:46 01/03/17 18:46		
		_				01/03/17 10.40	7440 02 2	
7470 Mercury			70 Preparation Meth					
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:46	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	70 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:16	7439-97-6	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	70 by SIM Preparati	on Meth	od: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	207-08-9	
Chrysene	ND	ug/L	0.10	1		01/03/17 12:09		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/03/17 12:09		
Fluoranthene	ND	ug/L	0.10	1		01/03/17 12:09		
Fluorene	ND	ug/L	0.10	1		01/03/17 12:09		
ndeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/03/17 12:09		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/03/17 12:09		
	IND	~g/ ∟	0.10		12/2-7/10 11.20	01/00/11 12.03	. 31313	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:22	01/03/17 12:09	91-20-3	



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Sample: MW-83A	Lab ID: 2047	7713013	Collected: 12/20/1	6 11:13	Received: 12	2/20/16 16:15 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3510			
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	74	%.	25-150	1		01/03/17 12:09		
Terphenyl-d14 (S)	91	%.	25-150	1	12/24/16 11:23	01/03/17 12:09	1718-51-0	
3260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	20.7	ug/L	4.0	1		12/27/16 15:33	8 67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 15:33	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 15:33	3 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 15:33	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 15:33	3 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 15:33	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 15:33	3 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 15:33		
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 15:33		
Chloroethane	ND	ug/L	0.50	1		12/27/16 15:33		
Chloroform	ND	ug/L	0.50	1		12/27/16 15:33		
Chloromethane	ND	ug/L	0.50	1		12/27/16 15:33		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 15:33		
Dibromochloromethane	ND ND	ug/L	0.50	1		12/27/16 15:33		
,2-Dibromoethane (EDB)	ND ND		1.0	1		12/27/16 15:33		
. ,		ug/L		1				
Dichlorodifluoromethane	ND	ug/L	1.0			12/27/16 15:33		
,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 15:33		
,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 15:33		
,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:33		
is-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 15:33		
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:33		
,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 15:33		
is-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:33		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:33		
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 15:33		
?-Hexanone	ND	ug/L	1.0	1		12/27/16 15:33		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 15:33	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 15:33	79-20-9	
Nethylene Chloride	ND	ug/L	0.50	1		12/27/16 15:33	75-09-2	
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 15:33	108-10-1	
Nethyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 15:33	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 15:33	3 100-42-5	
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 15:33	79-34-5	
etrachloroethene	ND	ug/L	0.50	1		12/27/16 15:33		
oluene	ND	ug/L	0.50	1		12/27/16 15:33		
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:33		
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:33		
richloroethene	ND	ug/L	0.50	1		12/27/16 15:33		
richlorofluoromethane	ND	ug/L	0.50	1		12/27/16 15:33		
/inyl chloride	ND	ug/L	0.50	1		12/27/16 15:33		
n&p-Xylene	ND ND	ug/L ug/L	2.0	1		12/27/16 15:33		



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Pace Project No.: 2047713								
Sample: MW-83A	Lab ID: 204	7713013	Collected: 12/20/1	6 11:13	Received: 1	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		12/27/16 15:3	3 95-47-6	
Dibromofluoromethane (S)	117	%.	72-126	1		12/27/16 15:3	3 1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/27/16 15:3	3 460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 15:3	3 2037-26-5	
Sample: MW-AD-01	Lab ID: 204	7713014	Collected: 12/20/1	6 13:12	Received: 1	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	- Analytical Meth	nod: EPA 80	D15B Modified Prepa	ration M	ethod: EPA 353	55		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 16:58	3	
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		0 01/04/17 16:58		
n-Pentacosane (S)	52	%.	16-137	1	12/27/16 11:20	01/04/17 16:58	8 629-99-2	
o-Terphenyl (S)	54	%.	10-121	1	12/27/16 11:20	01/04/17 16:58	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/29/16 09:59	9	
4-Bromofluorobenzene (S)	94	%.	44-148	1		12/29/16 09:59	9 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	1 01/03/17 14:54	4 7440-38-2	
Chromium	0.0011	mg/L	0.0010	1	12/27/16 07:44	1 01/03/17 14:54	4 7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	1 01/03/17 14:54	4 7439-92-1	
Vanadium	0.0062	mg/L	0.0050	1	12/27/16 07:44	1 01/03/17 14:54	4 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:50	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:50	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:50	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 18:50	7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Meth	nod: EPA	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	7 12/29/16 17:48	3 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:22	2 7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Benzo(a)pyrene Surrogates	ND	ug/L	0.10	1	01/04/17 09:09	9 01/04/17 17:39	9 50-32-8	H2
2-Fluorobiphenyl (S)	49	%.	25-150	1	12/27/16 12:16	5 12/30/16 18:52	2 321-60-8	
2-Fluorobiphenyl (S)	85	%.	25-150	1	01/04/17 09:09	01/04/17 17:39	9 321-60-8	



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Sample: MW-AD-01	Lab ID: 204	7713014	Collected: 12/20/1	16 13:12	Received: 12	2/20/16 16:15 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparat	ion Meth	nod: EPA 3510			
Surrogates	50	0/	05.450	4	40/07/40 40:40	40/00/40 40-50	4740.54.0	
Terphenyl-d14 (S)	56	%.	25-150	1		12/30/16 18:52		
Terphenyl-d14 (S)	88	%.	25-150	1	01/04/17 09:09	01/04/17 17:39	1718-51-0	
3260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Acetone	25.0	ug/L	4.0	1		12/27/16 15:51	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 15:51	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 15:51	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 15:51	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 15:51	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 15:51	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 15:51	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 15:51		
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 15:51		
Chloroethane	ND	ug/L	0.50	1		12/27/16 15:51		
Chloroform	ND	ug/L	0.50	1		12/27/16 15:51		
Chloromethane	ND	ug/L	0.50	1		12/27/16 15:51		
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 15:51		
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 15:51		
,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 15:51		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 15:51		
,1-Dichloroethane	ND ND	ug/L ug/L	0.50	1		12/27/16 15:51		
,2-Dichloroethane	ND ND	-	0.50	1		12/27/16 15:51		
•		ug/L		1				
,1-Dichloroethene	ND ND	ug/L	0.50 1.0	1		12/27/16 15:51 12/27/16 15:51		
sis-1,2-Dichloroethene		ug/L						
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:51		
,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 15:51		
sis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:51		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:51		
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 15:51		
2-Hexanone	ND	ug/L	1.0	1		12/27/16 15:51		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 15:51		
Methyl acetate	ND	ug/L	2.0	1		12/27/16 15:51		
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 15:51		
-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 15:51		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 15:51		
Styrene	ND	ug/L	1.0	1		12/27/16 15:51		
,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 15:51		
etrachloroethene	ND	ug/L	0.50	1		12/27/16 15:51		
oluene	ND	ug/L	0.50	1		12/27/16 15:51		
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:51	71-55-6	
,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:51	79-00-5	
richloroethene	ND	ug/L	0.50	1		12/27/16 15:51	79-01-6	
richlorofluoromethane	ND	ug/L	0.50	1		12/27/16 15:51	75-69-4	
inyl chloride	ND	ug/L	0.50	1		12/27/16 15:51	75-01-4	
n&p-Xylene	ND	ug/L	2.0	1		12/27/16 15:51		
-Xylene	ND	ug/L	1.0	1		12/27/16 15:51		



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-AD-01	Lab ID: 2	047713014	Collected: 12/20/1	16 13:12	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3260 MSV Low Level	Analytical M	lethod: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	114	%.	72-126	1		12/27/16 15:5		
4-Bromofluorobenzene (S)	101	%.	68-124	1		12/27/16 15:5		
oluene-d8 (S)	102	%.	79-119	1		12/27/16 15:5	1 2037-26-5	
Sample: MW-57A	Lab ID: 2	047713015	Collected: 12/20/1	16 14:30	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical M	lethod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	0.55	mg/L	0.50	1	12/27/16 11:20	01/04/17 17:20	6	
Dil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		01/04/17 17:20		
n-Pentacosane (S)	54	%.	16-137	1	12/27/16 11:20	01/04/17 17:20	6 629-99-2	
-Terphenyl (S)	60	%.	10-121	1	12/27/16 11:20	01/04/17 17:20	84-15-1	
021 GCV BTEX, MTBE, GRO	Analytical M	lethod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	71.5	ug/L	50.0	1		12/29/16 10:29	5	
-Bromofluorobenzene (S)	94	%.	44-148	1		12/29/16 10:2	5 460-00-4	
020 MET ICPMS	Analytical M	lethod: EPA 60	020 Preparation Met	hod: EPA	3010			
Arsenic	0.0031	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:58	3 7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:58	3 7440-47-3	
ead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:58	3 7439-92-1	
/anadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:58	3 7440-62-2	
020 MET ICPMS, Dissolved (LF)	Analytical M	lethod: EPA 60	020 Preparation Met	hod: EPA	A 3005A			
rsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:54	4 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:54	4 7440-47-3	
ead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:54	4 7439-92-1	
anadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 18:54	4 7440-62-2	
470 Mercury	Analytical M	lethod: EPA 7	470 Preparation Met	hod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:5	1 7439-97-6	
470 Mercury, Dissolved (LF)	Analytical M	lethod: EPA 74	470 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:24	4 7439-97-6	
270 MSSV PAH by SIM SEP	Analytical M	lethod: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3510			
Benzo(a)pyrene Surrogates	ND	ug/L	0.10	1	01/04/17 09:09	01/04/17 17:59	9 50-32-8	H2
-Fluorobiphenyl (S)	78	%.	25-150	1	12/27/16 12:16	12/30/16 19:12	2 321-60-8	
?-Fluorobiphenyl (S)	81	%.	25-150	1	01/04/17 09:09	01/04/17 17:59	9 321-60-8	
Terphenyl-d14 (S)	79	%.	25-150	1	01/04/17 09:09			



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-57A	Lab ID: 204	7713015	Collected: 12/20/1	6 14:30	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3510			
Surrogates Terphenyl-d14 (S)	85	%.	25-150	1	12/27/16 12:16	12/30/16 19:12	7 1718-51-0	
8260 MSV Low Level	Analytical Meth			•	12/21/10 12:10	12/00/10 10:12	. 1710010	
Acetone				4		12/27/16 16:00	0 67 64 4	
	19.1	ug/L	4.0	1		12/27/16 16:09 12/27/16 16:09		
Benzene	ND	ug/L	0.50	1			-	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 16:09		
Bromoform	ND	ug/L	0.50	1		12/27/16 16:09		
Bromomethane	ND	ug/L	0.50	1		12/27/16 16:09		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 16:09	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 16:09		L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 16:09	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 16:09	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 16:09	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 16:09	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 16:09	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 16:09	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 16:09	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 16:09	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 16:09	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 16:09		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 16:09		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 16:09		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 16:09		
rans-1,2-Dichloroethene	ND ND	ug/L	0.50	1		12/27/16 16:09		
1,2-Dichloropropane	ND ND	ug/L	0.50	1		12/27/16 16:09		
• •		-						
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 16:09		
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 16:09		
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 16:09		
2-Hexanone	ND	ug/L	1.0	1		12/27/16 16:09		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 16:09		
Methyl acetate	ND	ug/L	2.0	1		12/27/16 16:09		
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 16:09		
1-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 16:09		
Methyl-tert-butyl ether	7.9	ug/L	0.50	1		12/27/16 16:09		
Styrene	ND	ug/L	1.0	1		12/27/16 16:09		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 16:09		
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 16:09	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 16:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:09	79-00-5	
Frichloroethene	ND	ug/L	0.50	1		12/27/16 16:09	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 16:09		
/inyl chloride	ND	ug/L	0.50	1		12/27/16 16:09		
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 16:09		
o-Xylene	ND ND	ug/L	1.0	1		12/27/16 16:09		



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Pace Project No.: 2047713								
Sample: MW-57A	Lab ID: 204	7713015	Collected: 12/20/1	6 14:30	Received: 1	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Surrogates		0/	70.400			10/07/10 10 0		
Dibromofluoromethane (S)	114	%.	72-126	1		12/27/16 16:0		
4-Bromofluorobenzene (S)	96	%.	68-124	1		12/27/16 16:0		
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 16:0	9 2037-26-5	
Sample: MW-AD-03	Lab ID: 204	7713016	Collected: 12/20/1	6 15:16	Received: 1	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 353	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	12/27/16 11:20	01/04/17 19:1	5	
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1		01/04/17 19:1	-	
Surrogates		··················	3.30	-		, , , , , , , , , , , , , , , , , , , ,	-	
n-Pentacosane (S)	34	%.	16-137	1	12/27/16 11:20	01/04/17 19:1	5 629-99-2	
o-Terphenyl (S)	46	%.	10-121	1	12/27/16 11:20	01/04/17 19:1	5 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/29/16 10:5	1	
4-Bromofluorobenzene (S)	91	%.	44-148	1		12/29/16 10:5	1 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3010			
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 15:0	2 7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 15:0	2 7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 15:0	2 7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 15:0	2 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	nod: EPA	3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:5	8 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:5	8 7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:5	8 7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 18:5	8 7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	7 12/29/16 17:5	3 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EPA	7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:2	6 7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3510			
Benzo(a)pyrene Surrogates	ND	ug/L	0.10	1	01/04/17 09:09	01/04/17 18:1	9 50-32-8	H2
2-Fluorobiphenyl (S)	79	%.	25-150	1	01/04/17 09:09	01/04/17 18:1	9 321-60-8	
2-Fluorobiphenyl (S)	43	%.	25-150	1		12/30/16 19:3		
Terphenyl-d14 (S)	87	%.	25-150	1	01/04/17 09:09	01/04/17 18:1	9 1718-51-0	



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-AD-03	Lab ID: 204	Lab ID: 2047713016		6 15:16	Received: 12	2/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
3270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparati	on Meth	od: EPA 3510				
Surrogates									
Terphenyl-d14 (S)	49	%.	25-150	1	12/27/16 12:16	12/30/16 19:32	2 1718-51-0		
8260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260						
Acetone	37.9	ug/L	4.0	1		12/27/16 16:27	7 67-64-1		
Benzene	ND	ug/L	0.50	1		12/27/16 16:27	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 16:27	7 75-27-4		
Bromoform	ND	ug/L	0.50	1		12/27/16 16:27	75-25-2		
Bromomethane	ND	ug/L	0.50	1		12/27/16 16:27	7 74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 16:27	7 78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 16:27	7 75-15-0	L3	
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 16:27			
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 16:27			
Chloroethane	ND	ug/L	0.50	1		12/27/16 16:27			
Chloroform	ND	ug/L	0.50	1		12/27/16 16:27			
Chloromethane	ND	ug/L	0.50	1		12/27/16 16:27			
,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 16:27			
Dibromochloromethane	ND ND	ug/L ug/L	0.50	1		12/27/16 16:27			
	ND ND	-	1.0	1		12/27/16 16:27			
I,2-Dibromoethane (EDB) Dichlorodifluoromethane		ug/L		1					
	ND	ug/L	1.0			12/27/16 16:27			
,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 16:27			
,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 16:27			
,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 16:27			
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 16:27			
rans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 16:27			
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 16:27			
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 16:27			
rans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 16:27			
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 16:27	7 100-41-4		
2-Hexanone	ND	ug/L	1.0	1		12/27/16 16:27	7 591-78-6		
sopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 16:27	7 98-82-8		
Methyl acetate	ND	ug/L	2.0	1		12/27/16 16:27	7 79-20-9		
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 16:27	75-09-2		
I-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 16:27	7 108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 16:27	7 1634-04-4		
Styrene	ND	ug/L	1.0	1		12/27/16 16:27	7 100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 16:27	7 79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 16:27	7 127-18-4		
Toluene	ND	ug/L	0.50	1		12/27/16 16:27			
,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:27			
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:27			
Trichloroethene	ND	ug/L	0.50	1		12/27/16 16:27			
Frichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 16:27			
/inyl chloride	ND	ug/L ug/L	0.50	1		12/27/16 16:27			
•	ND ND		2.0	1			75-01-4 7 179601-23-1		
m&p-Xylene o-Xylene	ND ND	ug/L ug/L	2.0 1.0	1		12/27/16 16:27			



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: MW-AD-03	Lab ID: 2047	7713016	Collected: 12/	20/16 15:1	6 Received:	12/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Lim	it DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	111	%.	72-1	26 1		12/27/16 16:2	7 1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-1	24 1		12/27/16 16:2	7 460-00-4	
Toluene-d8 (S)	102	%.	79-1	19 1		12/27/16 16:2	7 2037-26-5	
Sample: FB-122016	Lab ID: 204	7713017	Collected: 12/20/16 15:25 R		5 Received:	12/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit DF		Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50	0.0 1		12/29/16 11:4	3	
4-Bromofluorobenzene (S)	94	%.	44-1	48 1		12/29/16 11:4	3 460-00-4	
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	16.0	ug/L	4	1.0 1		12/27/16 16:4	5 67-64-1	
Benzene	ND	ug/L	0.	50 1		12/27/16 16:4	5 71-43-2	
Bromodichloromethane	ND	ug/L	0.	50 1		12/27/16 16:4	5 75-27-4	
Bromoform	ND	ug/L	0.	50 1		12/27/16 16:4	5 75-25-2	
Bromomethane	ND	ug/L	0.	50 1		12/27/16 16:4	5 74-83-9	
2-Butanone (MEK)	ND	ug/L	2	2.0 1		12/27/16 16:4	5 78-93-3	
Carbon disulfide	ND	ug/L	•	1.0 1		12/27/16 16:4	5 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.	50 1		12/27/16 16:4	5 56-23-5	
Chlorobenzene	ND	ug/L	0.	50 1		12/27/16 16:4	5 108-90-7	
Chloroethane	ND	ug/L	0.	50 1		12/27/16 16:4	5 75-00-3	
Chloroform	ND	ug/L	0.	50 1		12/27/16 16:4	5 67-66-3	
Chloromethane	ND	ug/L	0.	50 1		12/27/16 16:4	5 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.	20 1		12/27/16 16:4	5 96-12-8	
Dibromochloromethane	ND	ug/L	0.	50 1		12/27/16 16:4	5 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	•	1.0 1		12/27/16 16:4	5 106-93-4	
Dichlorodifluoromethane	ND	ug/L	•	1.0 1		12/27/16 16:4	5 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.	50 1		12/27/16 16:4	5 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.	50 1		12/27/16 16:4	5 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.	50 1		12/27/16 16:4	5 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	•	1.0 1		12/27/16 16:4	5 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.	50 1		12/27/16 16:4	5 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.	50 1		12/27/16 16:4	5 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.	50 1		12/27/16 16:4	5 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.	50 1		12/27/16 16:4	5 10061-02-6	
Ethylbenzene	ND	ug/L	0.	50 1		12/27/16 16:4	5 100-41-4	
2-Hexanone	ND	ug/L		1.0 1		12/27/16 16:4	5 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L		1.0 1		12/27/16 16:4		
Methyl acetate	ND	ug/L	2	2.0 1		12/27/16 16:4	5 79-20-9	
Methylene Chloride	ND	ug/L	0.	50 1		12/27/16 16:4		
4-Methyl-2-pentanone (MIBK)	ND	ug/L		1.0 1		12/27/16 16:4		
Methyl-tert-butyl ether	ND	ug/L		50 1		12/27/16 16:4		



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: FB-122016	Lab ID: 204	7713017	Collected: 12/20/1	6 15:25	Received: 12	Received: 12/20/16 16:15 Matrix: Wa			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260						
Styrene	ND	ug/L	1.0	1		12/27/16 16:45	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 16:45	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 16:45	127-18-4		
Toluene	ND	ug/L	0.50	1		12/27/16 16:45	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:45	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:45	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		12/27/16 16:45	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 16:45	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 16:45	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 16:45	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		12/27/16 16:45	95-47-6		
Surrogates									
Dibromofluoromethane (S)	113	%.	72-126	1		12/27/16 16:45	1868-53-7		
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/27/16 16:45	460-00-4		
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 16:45	2037-26-5		
Sample: DUP001	Lab ID: 204	7713018	Collected: 12/20/1	6 00:00	Received: 12	2/20/16 16:15 M	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua	
2045M DD0/0D0 0		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
8015M DRO/ORO Organics	Arialytical Meti	IOU. LFA O	713B Modified Frepa	ii aliOi i ivi	elliou. LFA 3330	,			
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 17:54			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 17:54			
Surrogates									
_	54	%.	16-137	1	12/27/16 11:20	01/04/17 17:54			
n-Pentacosane (S)	54 55	%. %.	16-137 10-121	1 1		01/04/17 17:54 01/04/17 17:54	629-99-2		
n-Pentacosane (S) p-Terphenyl (S)		%.	10-121				629-99-2		
n-Pentacosane (S) p-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	55	%.	10-121				629-99-2 84-15-1		
n-Pentacosane (S) p-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	55 Analytical Meth	%. nod: EPA 80	10-121	1		01/04/17 17:54	629-99-2 84-15-1		
n-Pentacosane (S) p-Terphenyl (S) B021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	55 Analytical Meth 70.0 94	%. nod: EPA 80 ug/L %.	10-121 015/8021 50.0	1 1 1	12/27/16 11:20	01/04/17 17:54 12/29/16 11:17	629-99-2 84-15-1		
n-Pentacosane (S) n-Terphenyl	55 Analytical Meth 70.0 94	%. nod: EPA 80 ug/L %.	10-121 015/8021 50.0 44-148	1 1 1	12/27/16 11:20 A 3010	01/04/17 17:54 12/29/16 11:17	629-99-2 84-15-1 460-00-4		
n-Pentacosane (S) n-Terphenyl	55 Analytical Meth 70.0 94 Analytical Meth	%. nod: EPA 80 ug/L %. nod: EPA 60	10-121 015/8021 50.0 44-148 020 Preparation Metl	1 1 1 nod: EP#	12/27/16 11:20 A 3010 12/27/16 07:44	01/04/17 17:54 12/29/16 11:17 12/29/16 11:17	629-99-2 84-15-1 460-00-4 7440-38-2		
n-Pentacosane (S) n-Terphenyl	55 Analytical Meth 70.0 94 Analytical Meth 0.0032	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L	10-121 015/8021 50.0 44-148 020 Preparation Metl 0.0010	1 1 1 nod: EP#	12/27/16 11:20 A 3010 12/27/16 07:44 12/27/16 07:44	01/04/17 17:54 12/29/16 11:17 12/29/16 11:17 01/03/17 15:06	629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3		
n-Pentacosane (S) n-Pentacosane (S) n-Terphenyl (S) n-Terpheny	55 Analytical Meth 70.0 94 Analytical Meth 0.0032 ND	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L	10-121 015/8021 50.0 44-148 020 Preparation Meth 0.0010 0.0010	1 1 1 nod: EP# 1 1	12/27/16 11:20 A 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	01/04/17 17:54 12/29/16 11:17 12/29/16 11:17 01/03/17 15:06 01/03/17 15:06	629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1		
n-Pentacosane (S) p-Terphenyl (S) solution (55 Analytical Meth 70.0 94 Analytical Meth 0.0032 ND ND ND	%. ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L mg/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0010	1 1 1 nod: EP <i>P</i> 1 1 1	12/27/16 11:20 A 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44	01/04/17 17:54 12/29/16 11:17 12/29/16 11:17 01/03/17 15:06 01/03/17 15:06 01/03/17 15:06	629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1		
n-Pentacosane (S) p-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	Analytical Meth 70.0 94 Analytical Meth 0.0032 ND ND ND Analytical Meth	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L nod: EPA 60	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 nod: EPA 1 1 1 1 nod: EPA	A 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 A 3005A	01/04/17 17:54 12/29/16 11:17 12/29/16 11:17 01/03/17 15:06 01/03/17 15:06 01/03/17 15:06	629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2		
n-Pentacosane (S) p-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Analytical Meth 70.0 94 Analytical Meth 0.0032 ND ND ND Analytical Meth ND	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L nod: EPA 60 ug/L	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 nod: EPA 1 1 nod: EPA 1	A 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 A 3005A 12/30/16 06:50	01/04/17 17:54 12/29/16 11:17 12/29/16 11:17 01/03/17 15:06 01/03/17 15:06 01/03/17 15:06 01/03/17 15:06	629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2		
n-Pentacosane (S) p-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	Analytical Meth 70.0 94 Analytical Meth 0.0032 ND ND ND Analytical Meth	%. nod: EPA 80 ug/L %. nod: EPA 60 mg/L mg/L mg/L mg/L nod: EPA 60	10-121 50.0 44-148 020 Preparation Meth 0.0010 0.0010 0.0050 020 Preparation Meth	1 1 1 nod: EPA 1 1 1 1 nod: EPA	A 3010 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 12/27/16 07:44 A 3005A 12/30/16 06:50 12/30/16 06:50	01/04/17 17:54 12/29/16 11:17 12/29/16 11:17 01/03/17 15:06 01/03/17 15:06 01/03/17 15:06	629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2 7440-47-3		



Project: PUMA TERMIANL MW-SAMPLING

Date: 01/12/2017 09:09 AM

Sample: DUP001	Lab ID: 2047	7713018	Collected: 12/20/1	6 00:00	Received: 12	2/20/16 16:15	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
7470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EP/	A 7470			
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:5	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EP/	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:28	3 7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparati	ion Meth	nod: EPA 3510			
Benzo(a)pyrene Surrogates	ND	ug/L	0.10	1	01/04/17 09:09	01/04/17 18:39	9 50-32-8	H2
2-Fluorobiphenyl (S)	65	%.	25-150	1	12/27/16 12:16	12/30/16 19:52	2 321-60-8	
2-Fluorobiphenyl (S)	89	%.	25-150	1	01/04/17 09:09			
Terphenyl-d14 (S)	82	%.	25-150	1	01/04/17 09:09			
Terphenyl-d14 (S)	77	%.	25-150	1	12/27/16 12:16			
8260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
Acetone	15.5	ug/L	4.0	1		12/27/16 17:03	3 67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 17:03	3 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 17:03	3 75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 17:03	3 75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 17:03	3 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 17:03	3 78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 17:03	3 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 17:03	3 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 17:03	3 108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 17:03	3 75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 17:03	3 67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 17:03	3 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 17:03		
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 17:03		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 17:03	3 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 17:03		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 17:03		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 17:03		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 17:03		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 17:03	3 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 17:03		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 17:03		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 17:03		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 17:03		
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 17:03		
2-Hexanone	ND	ug/L	1.0	1		12/27/16 17:03		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 17:03		
Methyl acetate	ND	ug/L	2.0	1		12/27/16 17:03		
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 17:03		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 17:03		
Methyl-tert-butyl ether	8.4	ug/L	0.50	1		12/27/16 17:03		
Styrene	ND	ug/L	1.0	1		12/27/16 17:03		



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Sample: DUP001	Lab ID: 204	Lab ID: 2047713018		6 00:00	Received: 12/20/16	0/16 16:15 Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared Ar	nalyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/27	7/16 17:03	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	12/27	7/16 17:03	127-18-4	
Toluene	ND	ug/L	0.50	1	12/27	7/16 17:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/27	7/16 17:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/27	7/16 17:03	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	12/27	7/16 17:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	12/27	7/16 17:03	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	12/27	7/16 17:03	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	12/27	7/16 17:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	12/27	7/16 17:03	95-47-6	
Surrogates								
Dibromofluoromethane (S)	112	%.	72-126	1	12/27	7/16 17:03	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1	12/27	7/16 17:03	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1	12/27	7/16 17:03	2037-26-5	



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

QC Batch: 70949 Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples: 2047713001, 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713008,

2047713009, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016,

2047713017, 2047713018

METHOD BLANK: 296842 Matrix: Water

Associated Lab Samples: 2047713001, 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713008,

2047713009, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016,

2047713017, 2047713018

Blank Reporting Parameter Units Result Limit Qualifiers Analyzed Gasoline Range Organics ug/L ND 12/29/16 01:42 44-148 4-Bromofluorobenzene (S) %. 94 12/29/16 01:42

LABORATORY CONTROL SAMPLE: 296843 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Gasoline Range Organics ug/L 500 428 86 61-136 4-Bromofluorobenzene (S) %. 92 44-148

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297508 297507 MS MSD 2047713003 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual **Gasoline Range Organics** ug/L ND 500 500 489 480 92 90 15-147 2 20 4-Bromofluorobenzene (S) %. 93 95 44-148

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

QC Batch: 71004 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011,

2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 297033 Matrix: Water

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011,

2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 12/29/16 17:11

LABORATORY CONTROL SAMPLE: 297034

Spike LCS LCS % Rec
Parameter Units Conc. Result % Rec Limits Qualifiers

Mercury ug/L 1 1.1 106 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297035 297036

MS MSD 2047713002 Spike MS MSD MS MSD Spike % Rec Max RPD RPD Parameter Units Conc. Result Result % Rec % Rec Limits Result Conc. Qual Mercury ug/L ND 1 1 1.0 1.0 101 101 75-125 0 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

QC Batch: 71108 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011,

2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 297493 Matrix: Water

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011,

2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Mercury, Dissolved ug/L ND 0.20 12/29/16 18:44

LABORATORY CONTROL SAMPLE: 297494

LCS LCS Spike % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury, Dissolved 1 1.1 110 80-120 ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297495 297496

MS MSD MSD 2047713002 Spike Spike MS MS MSD % Rec Max RPD RPD Parameter Units Conc. Result Result % Rec % Rec Limits Result Conc. Qual Mercury, Dissolved ug/L ND 1 1 1.1 1.1 109 110 75-125 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

QC Batch: 70838 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011,

2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 296461 Matrix: Water

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011,

2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/03/17 17:51	
Chromium	mg/L	ND	0.0010	01/03/17 17:51	
Lead	mg/L	ND	0.0010	01/03/17 17:51	
Vanadium	mg/L	ND	0.0050	01/03/17 17:51	

LABORATORY CONTROL SAMPLE:	296462	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0.020	101	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	99	84-115	
Vanadium	mg/L	.02	0.020	100	81-115	

MATRIX SPIKE & MATRIX SPI	KE DUPLIC	CATE: 29646	3		296464							
			MS	MSD								
		2047674013	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	1.3 ug/L	.02	.02	0.021	0.021	96	97	80-120	1	20	
Chromium	mg/L	6.0 ug/L	.02	.02	0.026	0.026	101	98	80-120	2	20	
Lead	mg/L	9.5 ug/L	.02	.02	0.027	0.027	86	87	80-120	0	20	
Vanadium	mg/L	15.1 ug/L	.02	.02	0.035	0.035	97	97	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

QC Batch: 71126 Analysis Method: EPA 6020

QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011

METHOD BLANK: 297560 Matrix: Water

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Chromium, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Lead, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Vanadium, Dissolved	ug/L	ND	5.0	01/03/17 17:55	

LABORATORY CONTROL SAMPLE: 297561 LCS Spike LCS % Rec Parameter Conc. Result % Rec Limits Qualifiers Units Arsenic. Dissolved 20 20.2 101 80-120 ug/L Chromium, Dissolved ug/L 20 20.0 100 80-120 Lead, Dissolved ug/L 20 19.4 97 80-120 Vanadium, Dissolved ug/L 20 20.3 101 80-120

MATRIX SPIKE & MATRIX SP		297563										
Parameter	Units	2047806016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	ND	20	20	20.2	19.9	97	96	75-125	2	20	
Chromium, Dissolved	ug/L	ND	20	20	19.1	19.6	95	98	75-125	3	20	
Lead, Dissolved	ug/L	ND	20	20	20.4	20.2	102	101	75-125	1	20	
Vanadium, Dissolved	ug/L	ND	20	20	20.0	19.8	97	96	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

QC Batch: 71128 Analysis Method: EPA 6020

QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved Associated Lab Samples: 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 297566 Matrix: Water

Associated Lab Samples: 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/03/17 13:16	
Chromium, Dissolved	ug/L	ND	1.0	01/03/17 13:16	
Lead, Dissolved	ug/L	ND	1.0	01/03/17 13:16	
Vanadium, Dissolved	ug/L	ND	5.0	01/03/17 13:16	

LABORATORY CONTROL SAMPLE: 297567 LCS Spike LCS % Rec Parameter Conc. Result % Rec Limits Qualifiers Units Arsenic. Dissolved 20 20.0 100 80-120 ug/L Chromium, Dissolved ug/L 20 19.9 100 80-120 Lead, Dissolved ug/L 20 19.4 97 80-120 20.4 Vanadium, Dissolved ug/L 20 102 80-120

MATRIX SPIKE & MATRIX SF	PIKE DUPLIC	CATE: 29756	8		297569							
Parameter	Units	2047939001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	1.5	20	20	18.0	17.9	82	82	75-125	0	20	
Chromium, Dissolved	ug/L	ND	20	20	17.7	17.6	88	87	75-125	1	20	
Lead, Dissolved	ug/L	ND	20	20	22.0	22.0	110	110	75-125	0	20	
Vanadium, Dissolved	ug/L	ND	20	20	20.3	20.0	98	97	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

QC Batch: 70852 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level

Associated Lab Samples: 2047713001, 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713008,

2047713009, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016,

2047713017, 2047713018

METHOD BLANK: 296510 Matrix: Water

Associated Lab Samples: 2047713001, 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713008,

2047713009, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016,

2047713017, 2047713018

2047710	017, 20477 13010	Blank	Reporting		
Parameter	Units	Result	Limit	Analyzad	Qualifiers
Farameter				Analyzed	————
1,1,1-Trichloroethane	ug/L	ND	0.50	12/27/16 10:31	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	12/27/16 10:31	
1,1,2-Trichloroethane	ug/L	ND	0.50	12/27/16 10:31	
1,1-Dichloroethane	ug/L	ND	0.50	12/27/16 10:31	
1,1-Dichloroethene	ug/L	ND	0.50	12/27/16 10:31	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	12/27/16 10:31	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/27/16 10:31	
1,2-Dichloroethane	ug/L	ND	0.50	12/27/16 10:31	
1,2-Dichloropropane	ug/L	ND	0.50	12/27/16 10:31	
2-Butanone (MEK)	ug/L	ND	2.0	12/27/16 10:31	
2-Hexanone	ug/L	ND	1.0	12/27/16 10:31	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	12/27/16 10:31	
Acetone	ug/L	ND	4.0	12/27/16 10:31	
Benzene	ug/L	ND	0.50	12/27/16 10:31	
Bromodichloromethane	ug/L	ND	0.50	12/27/16 10:31	
Bromoform	ug/L	ND	0.50	12/27/16 10:31	
Bromomethane	ug/L	ND	0.50	12/27/16 10:31	
Carbon disulfide	ug/L	ND	1.0	12/27/16 10:31	
Carbon tetrachloride	ug/L	ND	0.50	12/27/16 10:31	
Chlorobenzene	ug/L	ND	0.50	12/27/16 10:31	
Chloroethane	ug/L	ND	0.50	12/27/16 10:31	
Chloroform	ug/L	ND	0.50	12/27/16 10:31	
Chloromethane	ug/L	ND	0.50	12/27/16 10:31	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/27/16 10:31	
cis-1,3-Dichloropropene	ug/L	ND	0.50	12/27/16 10:31	
Dibromochloromethane	ug/L	ND	0.50	12/27/16 10:31	
Dichlorodifluoromethane	ug/L	ND	1.0	12/27/16 10:31	
Ethylbenzene	ug/L	ND	0.50	12/27/16 10:31	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/27/16 10:31	
m&p-Xylene	ug/L	ND	2.0	12/27/16 10:31	
Methyl acetate	ug/L	ND	2.0	12/27/16 10:31	
Methyl-tert-butyl ether	ug/L	ND	0.50	12/27/16 10:31	
Methylene Chloride	ug/L	ND	0.50	12/27/16 10:31	
o-Xylene	ug/L	ND	1.0	12/27/16 10:31	
Styrene	ug/L	ND	1.0	12/27/16 10:31	
Tetrachloroethene	ug/L	ND	0.50	12/27/16 10:31	
Toluene	ug/L	ND	0.50	12/27/16 10:31	
trans-1,2-Dichloroethene	ug/L	ND	0.50	12/27/16 10:31	
•	•				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

METHOD BLANK: 296510 Matrix: Water

Associated Lab Samples: 2047713001, 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713008,

2047713009, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016,

2047713017, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,3-Dichloropropene	ug/L	ND	0.50	12/27/16 10:31	
Trichloroethene	ug/L	ND	0.50	12/27/16 10:31	
Trichlorofluoromethane	ug/L	ND	0.50	12/27/16 10:31	
Vinyl chloride	ug/L	ND	0.50	12/27/16 10:31	
4-Bromofluorobenzene (S)	%.	98	68-124	12/27/16 10:31	
Dibromofluoromethane (S)	%.	106	72-126	12/27/16 10:31	
Toluene-d8 (S)	%.	98	79-119	12/27/16 10:31	

LABORATORY CONTROL SAMPLE:	296511					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	55.9	112	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	47.8	96	15-179	
1,1,2-Trichloroethane	ug/L	50	46.2	92	58-144	
1,1-Dichloroethane	ug/L	50	53.4	107	63-129	
1,1-Dichloroethene	ug/L	50	53.6	107	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	49.3	99	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	49.5	99	52-161	
1,2-Dichloroethane	ug/L	50	51.7	103	57-148	
1,2-Dichloropropane	ug/L	50	50.7	101	66-128	
2-Butanone (MEK)	ug/L	50	53.5	107	32-183	
2-Hexanone	ug/L	50	46.7	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	49.0	98	26-171	
Acetone	ug/L	50	53.1	106	22-165	
Benzene	ug/L	50	54.4	109	62-131	
Bromodichloromethane	ug/L	50	48.9	98	69-132	
Bromoform	ug/L	50	43.4	87	35-166	
Bromomethane	ug/L	50	44.4	89	34-158	
Carbon disulfide	ug/L	50	66.5	133	31-128	_0
Carbon tetrachloride	ug/L	50	52.4	105	54-144	
Chlorobenzene	ug/L	50	50.3	101	70-127	
Chloroethane	ug/L	50	38.5	77	17-195	
Chloroform	ug/L	50	50.2	100	73-134	
Chloromethane	ug/L	50	55.3	111	17-153	
cis-1,2-Dichloroethene	ug/L	50	52.7	105	68-129	
cis-1,3-Dichloropropene	ug/L	50	51.5	103	72-138	
Dibromochloromethane	ug/L	50	46.0	92	49-146	
Dichlorodifluoromethane	ug/L	50	52.2	104	10-179	
Ethylbenzene	ug/L	50	48.7	97	66-126	
sopropylbenzene (Cumene)	ug/L	50	48.9	98	51-138	
m&p-Xylene	ug/L	100	96.8	97	65-129	
Methyl acetate	ug/L	50	50.0	100	20-142	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

ABORATORY CONTROL SAMPLE:	296511					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
lethyl-tert-butyl ether	ug/L		49.4	99	37-166	
ethylene Chloride	ug/L	50	53.2	106	46-168	
Kylene	ug/L	50	47.1	94	65-124	
yrene	ug/L	50	49.5	99	72-133	
rachloroethene	ug/L	50	49.0	98	46-157	
uene	ug/L	50	51.6	103	69-126	
s-1,2-Dichloroethene	ug/L	50	52.2	104	60-129	
s-1,3-Dichloropropene	ug/L	50	52.1	104	59-149	
loroethene	ug/L	50	52.8	106	67-132	
nlorofluoromethane	ug/L	50	56.6	113	39-171	
d chloride	ug/L	50	43.1	86	27-149	
omofluorobenzene (S)	%.			102	68-124	
omofluoromethane (S)	%.			107	72-126	
iene-d8 (S)	%.			102	79-119	

MATRIX SPIKE & MATRIX SF	7		296588									
Parameter	Units	2047713003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
1,1,1-Trichloroethane	ug/L	ND	50	50	64.4	57.3	129	115	54-137	12	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	51.2	47.1	102	94	15-187	8	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	51.8	47.7	104	95	59-148	8	20	
1,1-Dichloroethane	ug/L	ND	50	50	59.5	54.4	119	109	59-133	9	20	
1,1-Dichloroethene	ug/L	ND	50	50	62.9	58.2	126	116	44-146	8	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	51.8	48.3	104	97	23-166	7	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	54.5	50.0	109	100	55-166	9	20	
1,2-Dichloroethane	ug/L	ND	50	50	56.1	52.7	112	105	56-154	6	20	
,2-Dichloropropane	ug/L	ND	50	50	55.9	50.7	112	101	62-135	10	20	
2-Butanone (MEK)	ug/L	ND	50	50	59.5	55.0	119	110	20-205	8	20	
2-Hexanone	ug/L	ND	50	50	52.2	48.1	104	96	25-189	8	20	
1-Methyl-2-pentanone MIBK)	ug/L	ND	50	50	52.5	49.7	105	99	23-184	5	20	
Acetone	ug/L	15.1	50	50	75.4	69.8	121	109	11-217	8	20	
Benzene	ug/L	ND	50	50	60.5	54.8	121	110	52-141	10	20	
Bromodichloromethane	ug/L	ND	50	50	53.6	48.4	107	97	70-134	10	20	
Bromoform	ug/L	ND	50	50	47.9	44.5	96	89	37-171	7	20	
Bromomethane	ug/L	ND	50	50	47.1	45.0	94	90	34-155	4	20	
Carbon disulfide	ug/L	ND	50	50	81.7	71.5	163	143	28-130	13	20 N	<i>1</i> 0
Carbon tetrachloride	ug/L	ND	50	50	61.6	55.3	123	111	48-146	11	20	
Chlorobenzene	ug/L	ND	50	50	55.4	50.8	111	102	67-129	9	20	
Chloroethane	ug/L	ND	50	50	44.3	40.4	89	81	12-192	9	20	
Chloroform	ug/L	ND	50	50	56.0	51.5	112	103	66-143	8	20	
Chloromethane	ug/L	ND	50	50	63.0	58.2	126	116	14-155	8	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	58.5	54.3	117	109	56-141	7	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	56.3	51.0	113	102	70-139	10	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

MATRIX SPIKE & MATRIX SPIR	KE DUPLICA	ATE: 29658			296588							
			MS	MSD					_			
_		2047713003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Dibromochloromethane	ug/L	ND	50	50	50.3	47.4	101	95	50-150	6	20	
Dichlorodifluoromethane	ug/L	ND	50	50	62.7	57.2	125	114	10-173	9	20	
Ethylbenzene	ug/L	ND	50	50	54.3	50.4	109	101	57-135	8	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	53.5	50.6	107	101	40-146	6	20	
m&p-Xylene	ug/L	ND	100	100	112	101	112	101	56-136	10	20	
Methyl acetate	ug/L	ND	50	50	54.9	51.6	110	103	10-142	6	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	53.8	51.3	108	103	35-176	5	20	
Methylene Chloride	ug/L	ND	50	50	58.3	54.8	117	110	45-166	6	20	
o-Xylene	ug/L	ND	50	50	53.7	49.3	107	99	57-133	9	20	
Styrene	ug/L	ND	50	50	53.0	48.5	106	97	58-144	9	20	
Tetrachloroethene	ug/L	ND	50	50	57.4	53.1	115	106	48-143	8	20	
Toluene	ug/L	ND	50	50	57.2	51.8	114	104	59-136	10	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	60.8	55.6	122	111	57-132	9	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	56.7	52.4	113	105	59-154	8	20	
Trichloroethene	ug/L	ND	50	50	59.9	53.4	120	107	58-140	11	20	
Trichlorofluoromethane	ug/L	ND	50	50	67.3	62.1	135	124	24-175	8	20	
Vinyl chloride	ug/L	ND	50	50	51.2	46.4	102	93	21-150	10	20	
4-Bromofluorobenzene (S)	%.						99	98	68-124			
Dibromofluoromethane (S)	%.						108	107	72-126			
Toluene-d8 (S)	%.						102	101	79-119			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

QC Batch: 70881 Analysis Method: EPA 8015B Modified QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011,

2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 296610 Matrix: Water

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011,

2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/04/17 11:20	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/04/17 11:20	
n-Pentacosane (S)	%.	41	16-137	01/04/17 11:20	
o-Terphenyl (S)	%.	49	10-121	01/04/17 11:20	

LABORATORY CONTROL SAMPLE:	296611					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	ND	24	10-115	
n-Pentacosane (S)	%.			49	16-137	
o-Terphenyl (S)	%.			58	10-121	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

QC Batch: 70811 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011,

2047713012, 2047713013

METHOD BLANK: 296339 Matrix: Water

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011,

2047713012, 2047713013

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	12/30/16 18:12	
Acenaphthene	ug/L	ND	0.10	12/30/16 18:12	
Acenaphthylene	ug/L	ND	0.10	12/30/16 18:12	
Anthracene	ug/L	ND	0.10	12/30/16 18:12	
Benzo(a)anthracene	ug/L	ND	0.10	12/30/16 18:12	
Benzo(a)pyrene	ug/L	ND	0.10	12/30/16 18:12	
Benzo(b)fluoranthene	ug/L	ND	0.10	12/30/16 18:12	
Benzo(g,h,i)perylene	ug/L	ND	0.10	12/30/16 18:12	
Benzo(k)fluoranthene	ug/L	ND	0.10	12/30/16 18:12	
Chrysene	ug/L	ND	0.10	12/30/16 18:12	
Dibenz(a,h)anthracene	ug/L	ND	0.10	12/30/16 18:12	
Fluoranthene	ug/L	ND	0.10	12/30/16 18:12	
Fluorene	ug/L	ND	0.10	12/30/16 18:12	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	12/30/16 18:12	
Naphthalene	ug/L	ND	0.10	12/30/16 18:12	
Phenanthrene	ug/L	ND	0.10	12/30/16 18:12	
Pyrene	ug/L	ND	0.10	12/30/16 18:12	
2-Fluorobiphenyl (S)	%.	46	25-150	12/30/16 18:12	
Terphenyl-d14 (S)	%.	61	25-150	12/30/16 18:12	

LABORATORY CONTROL SAMPLE:	296340					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.4	59	35-150	
Acenaphthene	ug/L	4	2.7	67	35-150	
Acenaphthylene	ug/L	4	2.6	65	35-150	
Anthracene	ug/L	4	3.4	85	35-150	
Benzo(a)anthracene	ug/L	4	2.5	62	35-150	
Benzo(a)pyrene	ug/L	4	2.6	66	35-150	
Benzo(b)fluoranthene	ug/L	4	2.2	55	35-150	
Benzo(g,h,i)perylene	ug/L	4	2.7	68	35-150	
Benzo(k)fluoranthene	ug/L	4	2.9	72	35-150	
Chrysene	ug/L	4	3.0	76	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.0	74	35-150	
Fluoranthene	ug/L	4	2.5	63	35-150	
Fluorene	ug/L	4	2.6	65	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	2.9	72	35-150	
Naphthalene	ug/L	4	2.4	61	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

LABORATORY CONTROL SAMPLE:	296340					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Phenanthrene	ug/L		2.7	67	35-150	
Pyrene	ug/L	4	2.6	64	35-150	
2-Fluorobiphenyl (S)	%.			96	25-150	
Terphenyl-d14 (S)	%.			103	25-150	

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Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

QC Batch: 70840 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 296469 Matrix: Water Associated Lab Samples: 2047713014, 2047713015, 2047713016, 2047713018

Blank Reporting

 Parameter
 Units
 Result
 Limit
 Analyzed
 Qualifiers

 2-Fluorobiphenyl (S)
 %.
 50
 25-150
 12/30/16 17:33

 Terphenyl-d14 (S)
 %.
 56
 25-150
 12/30/16 17:33

LABORATORY CONTROL SAMPLE: 296470

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			52	25-150	
Terphenyl-d14 (S)	%.			59	25-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

QC Batch: 71324 Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 298353 Matrix: Water
Associated Lab Samples: 2047713014, 2047713015, 2047713016, 2047713018

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed ug/L Benzo(a)pyrene ND 0.10 01/04/17 16:59 25-150 2-Fluorobiphenyl (S) %. 78 01/04/17 16:59 Terphenyl-d14 (S) 84 25-150 01/04/17 16:59 %.

LABORATORY CONTROL SAMPLE: 298354

Date: 01/12/2017 09:09 AM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Benzo(a)pyrene	ug/L		3.3	82	35-150	
2-Fluorobiphenyl (S)	%.			103	25-150	
Terphenyl-d14 (S)	%.			103	25-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71175

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71176

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71223

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71393

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

Date: 01/12/2017 09:09 AM

H2 Extraction or preparation conducted outside EPA method holding time.

LO Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in

associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
047713002	EB-121916	EPA 3535	70881	EPA 8015B Modified	71223
047713003	MW-P120	EPA 3535	70881	EPA 8015B Modified	71223
047713004	MW-P122	EPA 3535	70881	EPA 8015B Modified	71223
047713005	MW-P123	EPA 3535	70881	EPA 8015B Modified	71223
047713006	MW-P124	EPA 3535	70881	EPA 8015B Modified	71223
047713007	MW-P121	EPA 3535	70881	EPA 8015B Modified	71223
047713010	EB-122016	EPA 3535	70881	EPA 8015B Modified	71223
047713011	MW-P119	EPA 3535	70881	EPA 8015B Modified	71223
047713012	MW-P118	EPA 3535	70881	EPA 8015B Modified	71223
047713013	MW-83A	EPA 3535	70881	EPA 8015B Modified	71223
047713014	MW-AD-01	EPA 3535	70881	EPA 8015B Modified	71223
047713015	MW-57A	EPA 3535	70881	EPA 8015B Modified	71223
047713016	MW-AD-03	EPA 3535	70881	EPA 8015B Modified	71223
047713018	DUP001	EPA 3535	70881	EPA 8015B Modified	71223
047713001	TB-121916	EPA 8015/8021	70949		
047713002	EB-121916	EPA 8015/8021	70949		
047713003	MW-P120	EPA 8015/8021	70949		
047713004	MW-P122	EPA 8015/8021	70949		
047713005	MW-P123	EPA 8015/8021	70949		
047713006	MW-P124	EPA 8015/8021	70949		
047713007	MW-P121	EPA 8015/8021	70949		
047713008	FB-121916	EPA 8015/8021	70949		
047713009	TB-122016	EPA 8015/8021	70949		
047713010	EB-122016	EPA 8015/8021	70949		
047713011	MW-P119	EPA 8015/8021	70949		
047713012	MW-P118	EPA 8015/8021	70949		
047713013	MW-83A	EPA 8015/8021	70949		
047713014	MW-AD-01	EPA 8015/8021	70949		
047713015	MW-57A	EPA 8015/8021	70949		
047713016	MW-AD-03	EPA 8015/8021	70949		
047713017	FB-122016	EPA 8015/8021	70949		
047713018	DUP001	EPA 8015/8021	70949		
047713002	EB-121916	EPA 3010	70838	EPA 6020	70889
047713003	MW-P120	EPA 3010	70838	EPA 6020	70889
047713004	MW-P122	EPA 3010	70838	EPA 6020	70889
047713005	MW-P123	EPA 3010	70838	EPA 6020	70889
047713006	MW-P124	EPA 3010	70838	EPA 6020	70889
047713007	MW-P121	EPA 3010	70838	EPA 6020	70889
047713010	EB-122016	EPA 3010	70838	EPA 6020	70889
047713011	MW-P119	EPA 3010	70838	EPA 6020	70889
047713012	MW-P118	EPA 3010	70838	EPA 6020	70889
047713013	MW-83A	EPA 3010	70838	EPA 6020	70889
047713014	MW-AD-01	EPA 3010	70838	EPA 6020	70889
047713015	MW-57A	EPA 3010	70838	EPA 6020	70889
047713016	MW-AD-03	EPA 3010	70838	EPA 6020	70889
	DUDOO4	EPA 3010	70838	EPA 6020	70889
047713018	DUP001	LFA 3010	70030	LFA 0020	10009



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2047713003	MW-P120	EPA 3005A	71126	EPA 6020	71232
2047713004	MW-P122	EPA 3005A	71126	EPA 6020	71232
2047713005	MW-P123	EPA 3005A	71126	EPA 6020	71232
047713006	MW-P124	EPA 3005A	71126	EPA 6020	71232
047713007	MW-P121	EPA 3005A	71126	EPA 6020	71232
047713010	EB-122016	EPA 3005A	71126	EPA 6020	71232
047713011	MW-P119	EPA 3005A	71126	EPA 6020	71232
047713012	MW-P118	EPA 3005A	71128	EPA 6020	71233
047713013	MW-83A	EPA 3005A	71128	EPA 6020	71233
047713014	MW-AD-01	EPA 3005A	71128	EPA 6020	71233
047713015	MW-57A	EPA 3005A	71128	EPA 6020	71233
047713016	MW-AD-03	EPA 3005A	71128	EPA 6020	71233
047713018	DUP001	EPA 3005A	71128	EPA 6020	71233
047713002	EB-121916	EPA 7470	71004	EPA 7470	71141
047713003	MW-P120	EPA 7470	71004	EPA 7470	71141
047713004	MW-P122	EPA 7470	71004	EPA 7470	71141
047713005	MW-P123	EPA 7470	71004	EPA 7470	71141
047713006	MW-P124	EPA 7470	71004	EPA 7470	71141
047713007	MW-P121	EPA 7470	71004	EPA 7470	71141
047713010	EB-122016	EPA 7470	71004	EPA 7470	71141
047713011	MW-P119	EPA 7470	71004	EPA 7470	71141
047713012	MW-P118	EPA 7470	71004	EPA 7470	71141
047713013	MW-83A	EPA 7470	71004	EPA 7470	71141
047713014	MW-AD-01	EPA 7470	71004	EPA 7470	71141
047713015	MW-57A	EPA 7470	71004	EPA 7470	71141
047713016	MW-AD-03	EPA 7470	71004	EPA 7470	71141
047713018	DUP001	EPA 7470	71004	EPA 7470	71141
047713002	EB-121916	EPA 7470	71108	EPA 7470	71142
047713003	MW-P120	EPA 7470	71108	EPA 7470	71142
047713004	MW-P122	EPA 7470	71108	EPA 7470	71142
047713005	MW-P123	EPA 7470	71108	EPA 7470	71142
047713006	MW-P124	EPA 7470	71108	EPA 7470	71142
047713007	MW-P121	EPA 7470	71108	EPA 7470	71142
047713010	EB-122016	EPA 7470	71108	EPA 7470	71142
047713010	MW-P119	EPA 7470	71108	EPA 7470	71142
047713011	MW-P118	EPA 7470	71108	EPA 7470	71142
047713012	MW-83A	EPA 7470	71108	EPA 7470	71142
047713013	MW-AD-01	EPA 7470	71108	EPA 7470	71142
047713014	MW-57A	EPA 7470	71108	EPA 7470	71142
047713015 047713016	MW-AD-03	EPA 7470	71108	EPA 7470	71142
047713018	DUP001	EPA 7470	71108	EPA 7470	71142
047713002	EB-121916	EPA 3510	70811	EPA 8270 by SIM	71176
047713003	MW-P120	EPA 3510	70811	EPA 8270 by SIM	71176
047713004	MW-P122	EPA 3510	70811	EPA 8270 by SIM	71176
047713005	MW-P123	EPA 3510	70811	EPA 8270 by SIM	71176
047713005	MW-P124	EPA 3510	70811	EPA 8270 by SIM	71176
047713007	MW-P121	EPA 3510	70811	EPA 8270 by SIM	71176



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Date: 01/12/2017 09:09 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047713010	EB-122016	EPA 3510	70811	EPA 8270 by SIM	71176
2047713011	MW-P119	EPA 3510	70811	EPA 8270 by SIM	71176
2047713012	MW-P118	EPA 3510	70811	EPA 8270 by SIM	71176
2047713013	MW-83A	EPA 3510	70811	EPA 8270 by SIM	71176
2047713014	MW-AD-01	EPA 3510	70840	EPA 8270 by SIM	71175
2047713014	MW-AD-01	EPA 3510	71324	EPA 8270 by SIM	71393
2047713015	MW-57A	EPA 3510	70840	EPA 8270 by SIM	71175
2047713015	MW-57A	EPA 3510	71324	EPA 8270 by SIM	71393
2047713016	MW-AD-03	EPA 3510	70840	EPA 8270 by SIM	71175
2047713016	MW-AD-03	EPA 3510	71324	EPA 8270 by SIM	71393
2047713018	DUP001	EPA 3510	70840	EPA 8270 by SIM	71175
2047713018	DUP001	EPA 3510	71324	EPA 8270 by SIM	71393
2047713001	TB-121916	EPA 5030B/8260	70852		
2047713002	EB-121916	EPA 5030B/8260	70852		
2047713003	MW-P120	EPA 5030B/8260	70852		
2047713004	MW-P122	EPA 5030B/8260	70852		
2047713005	MW-P123	EPA 5030B/8260	70852		
2047713006	MW-P124	EPA 5030B/8260	70852		
2047713007	MW-P121	EPA 5030B/8260	70852		
2047713008	FB-121916	EPA 5030B/8260	70852		
2047713009	TB-122016	EPA 5030B/8260	70852		
2047713010	EB-122016	EPA 5030B/8260	70852		
2047713011	MW-P119	EPA 5030B/8260	70852		
2047713012	MW-P118	EPA 5030B/8260	70852		
2047713013	MW-83A	EPA 5030B/8260	70852		
2047713014	MW-AD-01	EPA 5030B/8260	70852		
2047713015	MW-57A	EPA 5030B/8260	70852		
2047713016	MW-AD-03	EPA 5030B/8260	70852		
2047713017	FB-122016	EPA 5030B/8260	70852		
2047713018	DUP001	EPA 5030B/8260	70852		



CHAIN-OF-CUSTODY / Analytical Page 1204 The Chain-of-Custody is a LEGAL DOCUM WO#: 2047713

The Chain-of-Custody is a LEGAL DOCUM

WHIP parotassison				
Section A Required Client Information:	Section B Required Project Information:	Section C		1 of Z
Company: Arcadis	Report To: EFrain Calderon	Invoice Informatio Attention: 2047713		2075147
Address with vion Plaza 15-te	Сору То:	Company Name:	REGULATORY AGENCY	
401 Rd 165 MM 12 wards PR		Address:	☐ NPDES ☐ GROUND WA	ATER DRINKING WATER
Email To: EFra: Alexon & arcodis -us con	Purchase Order No.:	Pace Quote	UST F RCRA	OTHER
Phone: Eax: NAM TOTAL	Project Name: Phone Terminal MW-sampling	Reference: Pace Project	Table Sales	
Phone: (%)-))) - 4000 Fax: -))) - 50%6 Requested Due Date/TAT:		Manager: Show Redondo	1 1 1/6	
requested and animity.	Project Number: EOO 2. 160SB	Pace Profile #: 7252 # 1_		
			Analysis Filtered (Y/N)	
Section D Matrix Required Client Information MATRIX	Codes (2) COLLECTED	Preservatives		
Drinking Wa				100 miles 100 mi
Water Waste Wate	ster DW sp D U COMPOSITE COMPOSITE END/GRAB START END/GRAB COMPOSITE ST			1 2 1
Product Soil/Solid	SL I g l To l l l l l l l l l l l l l l l l l	R8 7.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	Netals (Merchy Discount Metals	3\1/
SAMPLE ID Oil Wipe			Merca Merca Months	
(A-Z, 0-9 / ,-) Air Sample IDs MUST BE UNIQUE Tissue	AR UDO			
Other	· · · × ⊔ · · i		소리 첫	1 40
TEM##	AK OD DATE TIME DATE TIME	# OF CONTAIN # OF CONTAIN Unpreserved H-SO4 HNO3 HOCH Na ₂ S2 ₃ Methanol Other Cothe	MeTals /	81
	DATE THE DATE THE		V 8 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Pace Project No./ Lab I.D.
1 TB-121916	VT G 12/19/10 LAB	4 4 XX		
2 EB-121916	mr 0 12/19/16 0958	105 14 XXX	<u> </u>	
3 MW - P120	WT 6- 12/19/10 1110	105 14 2 2 2 2		
4 MW - P122	WT G 12/19/16 120%	10 5 1 4 XXXX		·
5 MW - P123	12/15/16/1421	10 5 1 4 4 × >		
6 Mw - P124	WT 6- 12/11/16 1545	105 14	XXX	
7 MW- P121	2/9/6 1627		×××	
8 FB-1219ib	VT 6 12/11/6 1645	4 4		
9 TB~ 122016	int 12/20/10 LAB	4		
10 EB-122016	-r C- 12/20/16 0833			
11 MW-P119 12 MW-P118	WTO- 12/20/60918		× * *	<u> </u>
12 MW - P118	WT 0- 12/10/16 1009	10 5 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION DATE	TIME ACCEPTED BY / AFFILIATION	DATE TIME	SAMPLE CONDITIONS
Level II	Andmicolon / Ancado 12/20/16	16:18 AL PAU	5 ppollo 16:15/20	7 4 1 8 1 8 1
		10.00	1.7	7 7
	1.17000	y red Egg	10101110	
3 2 4 4 1	Fed Eura 3714	100 Cartac	1020 03	944
P ag				
Page 72 of 74	RIGINAL SAMPLER NAME AND SIGNATU	<u> </u>)- <u>ķ</u>	Received on loe (Y/N) Custody Sealed Cooler (Y/N) Samples Intact (Y/N)
2 of	PRINT Name of SAMPLE	/ Jr	Temp is	Received on loe (Y/N) Custody Sealed Cooler (Y/N) Samples Intact (Y/N)
74	SIGNATURE of SAMPLE	R: DATE Signed (MM/DD/YY):	12/20/16	Reil C Sami



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Required Project Information: Required Project Information: Company A Cod-3-5 Section Cody E Cody C C	Section A Section	ı B		Section C	Pi	age: 2 of 2
Copy To Copy T	Required Client Information: Required	d Project Information:		Invoice Information:		2075146
Corporative Corporative	Company: Arusis Report To	o Efrain	(a)gras	Attention:	<u> </u>	2073140
A3 165 Km 12 currying Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Project Name Parchase Order No. Parchase O	Address: Copy To:			Company Name:	REGULATORY AGEN	
Requested Analysis Filtered (YM) Section D Matrix Codes	40 011 010 philosophis N2			Address:	□ NPDES □ GRO	OUND WATER CORINKING WATER
Requested Analysis Filtered (Y/N) Section D Matrix Codes	Email To: Purchase	e Order No.:			r ust r rcr	A F OTHER
Section D Matrix Code Ma	Phone: Faxa Ass Project No.	Name: N	1- 1 10 100 500011-	Pogo Peniast	Site Location	
Section D Matrix Codes Graph Matrix C	Project No.	Yumher		Manager: Pace Profile #:	966 In Albania I I	R
Section D Required Circle Information Matrix Codes Graph Gra	Requested Due Date (A).	E009	1602B	1000	المراد المسلم	
SAMPLE ID Wider		,			to the report of the second of the second Euler Control of the second of the	
SAMPLE ID Water		AP)	COLLECTED	Preservatives 3		
SAMPLE ID Wipe Ar Wipe	Drinking Water DW	o les lo				00
SAMPLE ID Wipe Ar Wipe	Waste Water WW	, S Ö COMPO	OSITE COMPOSITE OSITE END/GRAB			
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Sample IDS MUST BE UNIQUE TISSUE OTHER STOTE OF STOTE OF STOTE OTHER STOTE OTH	SAMPLE ID Oil OL WP					
1 Mw-83A with 12/20/6 11(13 10 5 1 4	(A-Z, 0-9 / ,-) Air AR Sample IDs MUST BE UNIQUE Tissue TS	90 15	A PAR			š 🙀
1 Mw-83A with 12/20/6 11(13 10 5 1 4		ᅕ			[1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
1 Mw-83A with 12/20/6 11(13 10 5 1 4	× .	ATR		OF OF OF OF OF OF OF OF OF OF OF OF OF O	불일원 역 취 및	
2 MW-AD-DI WT & IZIDIK I3IA ID S I I 4		3,2			- 	Pace Project No./ Lab I.D.
3						
4 MW-AD-03 WT & 12/20/6 ISI6 IO S I Y S XXXXXX S S DUPOOI WT & 12/20/6 IS2S IO S I Y S XXXXXX S S S S S S S S S S S S S S	2 MW-AD-DI					
5 FB - 12 2016 WT & 12/20/6 1525 10 5 1 4 XXXXXX	3 MW-57A	vt 0-			XXXXXX	
6 DUPOOI 977 & 12/20/6 10 S 11 4 XXXXXX 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 MW-AD-03		12/20/16 1516			<u> </u>
6 DUPOOI 977 & 12/20/6 10 S 11 4 XXXXXX 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 EB - 125019	WT C-				
8 9 10 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 Dupool	WT 6-	12/20/6	10 5 114	XXXXX	
9 10 10 11 11 11 11 11 11 11 11 11 11 11						
10						
						<u> </u>
	10					
12						
	12					
ADDITIONAL COMMENTS	ADDITIONAL COMMENTS	RELINQUISHED BY	/ AFFILIATION DATE	TIME ACCEPTED	/	SAMPLE CONDITIONS
Level IV Andri Colon/Arcads 12ko/16 No:14 Le PACE/2/20/16 16:15 20 X N Y	Level IV An	an Colon/A	reads 12kollu	110:19	e- HCC 2/20/16 16:1	529 X N Y
(AG 1200 100 100 100 100 100 100 100 100 10				APOS	1200	1.01
			19. 10.00	1 1 2 1 2		1031
		- Fed	IN HUSTY	1000	- 100 10-23-10 1030	
37 1 0	L P					8/
ORIGINAL SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: PRINT Name of SAMPLER: SIGNATURE of SAMPLER: DATE Signed DATE Signed DATE Signed	ORIGINA	AL		<u> </u>		mtact Sole Co
ORIGINAL PRINT Name of SAMPLER: PRINT Name of SAMPLER: SIGNATURE of SAMPLER: MMM/DD/YY): ORIGINAL PRINT Name of SAMPLER: MMM/DD/YY): ORIGINAL ORIGINAL PRINT Name of SAMPLER: MMM/DD/YY): ORIGINAL ORIGANI ORIGINAL ORIGINAL ORIGINAL ORIGINAL ORIGINAL ORIGINAL	73 0		PRINT Name of SAMPLER			mp in mp in [///] ///
ORIGINAL SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: A.A.— Colon SIGNATURE of SAMPLER: M. DATE Signed (MM/DD/YY): DATE Signed (MM/DD/YY): DATE Signed (MM/DD/YY):	Page ORIGINA 73 of 74		SIGNATURE of SAMPLER	: M		Samp Samp Samp Samp Samp Samp Samp Samp

WO#: 2047713

Sample Condition Upor

PM: JAR1

Due Date: 01/05/17

Pace Analytical"		-		CLIEN	1: 98-RKCADISPR
/	1000 Riverbend, Blvd., S St. Rose, LA 70087	Suite F		Project "	
courier: Pace Courie	r 🛘 Hired Courie	r Fed X	(D U	PS □ DHL	□ USPS □ Customer □ Other
ustody Seal on Cooler/Box	Present: [se	e COC]			Custody Seals intact: ☐Yes ☐No
herometer Therm	Fisher IR 5 Fisher IR 6 Fisher IR 7	Type of I	ce:	Wet Blue None	Samples on ice: [see COC]
Cooler Temperature: [see	COC] Te	emp should b	e above	freezing to 6°C	Date and Initials of person examining contents:
emp must be measured from T	emperature blank whe	n present		Comments:	
emperature Blank Present"	?	□Yes □	No NiA	1	
hain of Custody Present:		Yes 🛘	No □N/A	2	
nain of Custody Complete:		-₽Yes □	No □N/A	3	
nain of Custody Relinquishe	ed:		No □N/A	4	· · · · · · · · · · · · · · · · · · ·
mpler Name & Signature o	on COC:	-El√es □:	No □N/A	5	
mples Arrived within Hold	Time:	Yes □	No □N/A	6	
fficient Volume:		√Yes □	No 🗆 N/A	7	
rrect Containers Used:			No □N/A	8	
tered vol. Rec. for Diss. tes	sts	□Yes □	No JENIA	9	
ample Labels match COC:			No □N/A	10	
containers received within ecautionary and/or expiration		_DYes □	No □N/A	11	
containers needing chemic en checked (except VOA, c		e ⊬Yes □	No □N/A	12	
containers preservation ch mpliance with EPA recomn		n ∰Yes □	√o □N/A		oreserative added? □Yes □No cord lot no.: HNO3 H2SO4
eadspace in VOA Vials (>6	mm):	□Yes .□	Vo □N/A	14	
p Blank Present:		ØYes. □r	No	15	
ient Notification/ Resolut	ion:				
rson Contacted:					Date/Time:
mments/ Resolution:	1. 41				
M-83 F	t rec. 1	oon v	ica V	nolen	
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				. 707000	





January 16, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 29, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

กวกกล

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246





SAMPLE SUMMARY

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047989001	TB-122916	Water	12/29/16 00:00	12/29/16 14:00
2047989002	EB-122916	Water	12/29/16 09:06	12/29/16 14:00
2047989003	MW-86A	Water	12/29/16 09:50	12/29/16 14:00
2047989004	MW-MP5A	Water	12/29/16 10:48	12/29/16 14:00
2047989005	MW-DP5	Water	12/29/16 11:37	12/29/16 14:00
2047989006	FB-122916	Water	12/29/16 11:42	12/29/16 14:00



SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

_ab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047989001	TB-122916	EPA 8015/8021	МНМ	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989002	EB-122916	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047989003	MW-86A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	M H M	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047989004	MW-MP5A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
047989005	MW-DP5	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	мнв1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989006	FB-122916	EPA 8015/8021	МНМ	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Method: Client:

EPA 8015B Modified Description: 8015M DRO/ORO Organics BBL Caribe / Arcadis PR

Date:

January 16, 2017

General Information:

4 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO **Client**: BBL Caribe / Arcadis PR

Date:

January 16, 2017

General Information:

6 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Method: EPA 6020

Description: 6020 MET ICPMS

Client:

BBL Caribe / Arcadis PR

Date:

January 16, 2017

General Information:

4 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

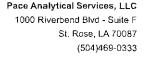
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

January 16, 2017

Client:

BBL Caribe / Arcadis PR

Date:

General Information:

4 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Method:

EPA 7470 Description: 7470 Mercury

Client:

BBL Caribe / Arcadis PR

Date:

January 16, 2017

General Information:

4 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No .:

2047989

Method:

EPA 8270 by SIM

Client:

Description: 8270 MSSV PAH by SIM SEP

Client: Date: BBL Caribe / Arcadis PR January 16, 2017

General Information:

4 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Snikes

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71324

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

(504)469-0333



PROJECT NARRATIVE

Project:

Date:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Method: EPA 5030B/8260 Description: 8260 MSV Low Level Client: BBL Caribe / Arcadis PR January 16, 2017

General Information:

6 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 298069)
 - · Carbon disulfide
- LCS (Lab ID: 298395)
 - · Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71267

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047993001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- + MS (Lab ID: 298070)
 - · Carbon disulfide
- MSD (Lab ID: 298071)
 - · Carbon disulfide

Additional Comments:





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Method:EPA 5030B/8260Description:8260 MSV Low LevelClient:BBL Caribe / Arcadis PR

Date: January 16, 2017

Analyte Comments:

QC Batch: 71267

C9: Common Laboratory Contaminant.

- EB-122916 (Lab JD: 2047989002)
 - Acetone
- FB-122916 (Lab ID: 2047989006)
 - Acetone
- MW-86A (Lab ID: 2047989003)
 - Acetone
- MW-DP5 (Lab ID: 2047989005)
 - Acetone
- MW-MP5A (Lab ID: 2047989004)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

CHANCE TERRORITOR ENTER

Sample: TB-122916	Lab ID: 204	7989001	Collected: 12/29/1	I 6 00:00	Pagaiyad: 1	2/29/16 14:00 N	latrix: Water	
·	Lau ID. 204	7 303001	Collected: 12/29/	00.00	Received. 1	2/29/10 14.00 N	atrix. vvater	
Parameters	Results —	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/05/17 04:36		
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/05/17 04:36	460-00-4	
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	142	ug/L	4.0	1		01/04/17 12:47	67-64-1	
Benzene	ND	ug/L	0.50	1		01/04/17 12:47	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/04/17 12:47	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/04/17 12:47	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/04/17 12:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/04/17 12:47	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/04/17 12:47	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/04/17 12:47	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/04/17 12:47	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/04/17 12:47	75-00 - 3	
Chloroform	ND	ug/L	0.50	1		01/04/17 12:47	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/04/17 12:47		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/04/17 12:47		
Dibromochloromethane	ND	ug/L	0.50	1		01/04/17 12:47	_	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/04/17 12:47	= :	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/04/17 12:47		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/04/17 12:47		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/04/17 12:47		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/04/17 12:47		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/04/17 12:47		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/04/17 12:47		
1,2-Dichloropropane	ND	ug/L	0,50	1		01/04/17 12:47		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/04/17 12:47		
trans-1,3-Dichloropropene	ND	ug/L	0:50	1		01/04/17 12:47		
Ethylbenzene	ND	ug/L	0.50	1		01/04/17 12:47		
2-Hexanone	ND	ug/L	1.0	1		01/04/17 12:47		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/04/17 12:47		
Methyl acetate	ND	ug/L	2.0	1		01/04/17 12:47		
Methylene Chloride	ND	ug/L ug/L	0.50	1		01/04/17 12:47		
4-Methyl-2-pentanone (MIBK)	ND	-	1.0	1				
Methyl-tert-butyl ether	ND ND	ug/L		1		01/04/17 12:47		
Styrene	ND ND	ug/L	0.50			01/04/17 12:47		
-		ug/L	1.0	1		01/04/17 12:47		
1,1,2,2-Tetrachloroethane Tetrachloroethene	ND	ug/L	0.50	1		01/04/17 12:47		
	ND	ug/L	0.50	1		01/04/17 12:47		
Toluene	ND	ug/L	0.50	1		01/04/17 12:47		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/04/17 12:47		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/04/17 12:47		
Trichloroethene	ND .	ug/L	0.50	1		01/04/17 12:47		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/04/17 12:47		
Vinyl chloride	ND	ug/L	0.50	1		01/04/17 12:47		
m&p-Xylene	ND	ug/L	2.0	1		01/04/17 12:47		1
o-Xylene	ND	ug/L	1.0	1		01/04/17 12:47	95-47-6	

REPORT OF LABORATORY ANALYSIS

tical Services, LLC erband Blvd - Suite F S lose, LA 70087 404)469-0333

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Ð	rojoct.	
1	roject:	

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/16/2017 01:10 PM

No.: 2047989

Sample: TB-122916	Lab ID: 2047989001		Collected: 12/29/1	6 00:00	Received:	1421/16 14 00 Marix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared		Qual
8260 MSV Low Level	Analytical Met	:hod: EPA 50	030B/8260		THE PARTY		
Surrogates							
Dibromofluoromethane (S)	102	%.	72-126	1		01/04/17 12:47 1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/04/17 12:47 460-00-4	
Toluene-d8 (S)	98	%.	79-119	1		01/04/17 12:47 2037-26-5	

Sample: EB-122916	Lab ID: 2047989002		Collected: 12/29/16 09:06		Received: 12/29/16 14:00		Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual			
8015M DRO/ORO Organics	Analytical Meth	Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535									
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 18:21					
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 18:21					
Surrogates	36	%.	46 407	1	04/04/47 00:00	04/40/47 40:04	000 00 0				
n-Pentacosane (S) o-Terphenyl (S)	30 41	%.	16-137			01/10/17 18:21					
o-reiphenyi (5)	41	₹0.	10-121	1	01/04/17 08:39	01/10/17 18:21	84-15-1				
8021 GCV BTEX, MTBE, GRO	Analytical Met	nod: EPA 80	015/8021								
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/05/17 05:03					
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/05/17 05:03	460-00-4				
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	od: EPA	A 3010						
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:47	7440-38-2				
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:47	7440-47-3				
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:47	7439-92-1				
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:47	7440-62-2				
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Meth	od: EP/	A 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:41	7440-38-2				
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:41	7440-47-3				
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:41	7439-92-1				
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:41	7440-62-2				
7470 Mercury	Analytical Meti	nod: EPA 74	170 Preparation Meth	od: EP/	A 7470						
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:33	7439-97-6				
7470 Mercury, Dissolved (LF)	Analytical Met	nod: EPA 74	170 Preparation Meth	od: EP	A 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:50	7439-97-6				
8270 MSSV PAH by SIM SEP	Analytical Met	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510									
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	83-32-9				
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	208-96-8				
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	120-12-7				
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	56-55-3				
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	50-32-8				

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Sample: EB-122916 Lab ID: 2047989002 Collected: 12/29/16 09:06 Received Parameters Results Units Report Limit Prepared Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Benzo(b)fluoranthene ND 0.10 ug/L 1 01/04/17 09:09 01/05/17 00:38 205-99-2 Benzo(g,h,i)perylene ND 0.10 01/04/17 09:09 01/05/17 00:38 191-24-2 ug/L 1 Benzo(k)fluoranthene ND ug/L 0.10 01/04/17 09:09 01/05/17 00:38 207-08-9 1 Chrysene ND 0.10 01/04/17 09:09 01/05/17 00:38 218-01-9 ua/L 1 Dibenz(a,h)anthracene ND ug/L 0.10 1 01/04/17 09:09 01/05/17 00:38 53-70-3 Eluoranthene ND ug/L 0.10 1 01/04/17 09:09 01/05/17 00:38 206-44-0 Fluorene ND ug/L 0.10 1 01/04/17 09:09 01/05/17 00:38 86-73-7 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/04/17 09:09 01/05/17 00:38 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 01/04/17 09:09 01/05/17 00:38 91-57-6 Naphthalene ND ug/L 0.10 1 01/04/17 09:09 01/05/17 00:38 91-20-3 Phenanthrene ND ug/L 0.101 01/04/17 09:09 01/05/17 00:38 85-01-8 Pyrene NΩ 01/04/17 09:09 01/05/17 00:38 129-00-0 ug/L 0.10 1 Surrogates 2-Fluorobiphenyl (S) 78 %. 25-150 1 01/04/17 09:09 01/05/17 00:38 321-60-8 Terphenyl-d14 (S) 76 %. 25-150 1 01/04/17 09:09 01/05/17 00:38 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 30.6 ug/L 4 N 1 01/03/17 16:06 67-64-1 C9 Benzene ND ug/L 0.50 1 01/03/17 16:06 71-43-2 Bromodichloromethane 01/03/17 16:06 75-27-4 ND ug/L 0.50 1 Bromoform ND ua/L 0.50 1 01/03/17 16:06 75-25-2 Bromomethane 01/03/17 16:06 74-83-9 ND ua/L 0.50 1 2-Butanone (MEK) ND ug/L 2.0 01/03/17 16:06 78-93-3 1 Carbon disulfide ND ug/L 1.0 1 01/03/17 16:06 75-15-0 1.3 Carbon tetrachloride ND ug/L 0.50 1 01/03/17 16:06 56-23-5 Chlorobenzene ND ug/L 0.50 1 01/03/17 16:06 108-90-7 Chloroethane ND 0.50 ug/L 1 01/03/17 16:06 75-00-3 Chloroform ND ug/L 0.50 1 01/03/17 16:06 67-66-3 Chloromethane 0.64 0.50 ug/L 1 01/03/17 16:06 74-87-3 1,2-Dibromo-3-chloropropane ug/L ND 0.20 01/03/17 16:06 96-12-8 Dibromochloromethane ND ug/L 0.50 01/03/17 16:06 124-48-1 1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 01/03/17 16:06 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 01/03/17 16:06 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 01/03/17 16:06 75-34-3 1,2-Dichloroethane ND ug/L 0.50 1 01/03/17 16:06 107-06-2 1,1-Dichloroethene ND ug/L 0.50 1 01/03/17 16:06 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/03/17 16:06 156-59-2 trans-1.2-Dicbloroethene ND ug/L 0.50 1 01/03/17 16:06 156-60-5 1.2-Dichloropropane ND ug/L 0.50 1 01/03/17 16:06 78-87-5 cis-1,3-Dichloropropene ND ug/L 0.50 1 01/03/17 16:06 10061-01-5 trans-1,3-Dichloropropene ND 0.50 ug/L 1 01/03/17 16:06 10061-02-6 Ethylbenzene ND ug/L 0.50 01/03/17 16:06 100-41-4 1 2-Hexanone ND ug/L 1.0 1 01/03/17 16:06 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 1 01/03/17 16:06 98-82-8 Methyl acetate ND ug/L 2.0 1 01/03/17 16:06 79-20-9 Methylene Chloride ND ug/L 0.50 1 01/03/17 16:06 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 01/03/17 16:06 108-10-1

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Vanadium, Dissolved

Date: 01/16/2017 01:10 PM

2047989

Pace Project No.: 2047989						ISI C	UR 11.00	/8/	
Sample: EB-122916	Lab ID:	2047989002	Collected:	12/29/1	6 09:06	Legerard: 12	**************************************	Mrik: Water	
Parameters	Results	Units	Repor	t Limit	DF	Eliane.		CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260					200	Litter		
Methyl-tert-butyl ether	NE) ug/L		0.50	1		01/03/17 16:06	1634-04-4	
Styrene	NE) ug/L		1.0	1		01/03/17 16:06	100-42-5	
1,1,2,2-Tetrachloroethane	NE) ug/L		0.50	1		01/03/17 16:06	79-34-5	
Tetrachloroethene	NE	O ug/L		0.50	1		01/03/17 16:06	127-18-4	
Toluene	NE	O ug/L		0.50	1		01/03/17 16:06	108-88-3	
1,1,1-Trichloroethane	NE	D ug/L		0.50	1		01/03/17 16:06	71-55-6	
1,1,2-Trichloroethane	NE	O ug/L		0.50	1		01/03/17 16:06	79-00-5	
Trichloroethene	NE) ug/L		0.50	1		01/03/17 16:06	79-01 - 6	
Trichlorofluoromethane	NE	O ug/L		0.50	7		01/03/17 16:06	75-69-4	
Vinyl chloride	NE	0 ug/L		0.50	1		01/03/17 16:06	75-01-4	
m&p-Xylene	NE	O ug/L		2.0	1		01/03/17 16:06	179601-23-1	
o-Xylene	NE	O ug/L		1.0	1		01/03/17 16:06	95-47-6	
Surrogates									
Dibromofluoromethane (S)	114	4 %.		72-126	1		01/03/17 16:06	1868-53-7	
4-Bromofluorobenzene (S)	100			68-124	1		01/03/17 16:06	460-00-4	
Toluene-d8 (S)	100	0 %.		79-119	1		01/03/17 16:06	2037-26-5	
Sample: MW-86A	Lab ID:	2047989003	Collected:	12/29/1	6 09:50	Received: 12	2/29/16 14:00 N	Matrix: Water	
Parameters	Results	Units	Repor	t Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical	 Method: EPA 8	015B Modifie	d Prepa	ration M	lethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	NE	D mg/L		0.50	1	01/04/17 08:39	01/10/17 18:49		
Oil Range Organics (>C28-C40) Surrogates	NE			1.0	1		01/10/17 18:49		
n-Pentacosane (S)	49	9 %.		16-137	1	01/04/17 08:39	01/10/17 18:49	629-99-2	
o-Terphenyl (S)	57	7 %.		10-121	1		01/10/17 18:49		
8021 GCV BTEX, MTBE, GRO	Analytical	Method: EPA 8	015/8021						
Gasoline Range Organics	NE	D ug/L		50.0	1		01/05/17 05:28		
Surrogates 4-Bromofluorobenzene (S)	88	9 %.	,	44-148	1		01/05/17 05:28	460-00-4	
6020 MET ICPMS	Analytical	Method: EPA 6	020 Preparat	tion Met	hod: EPA	A 3010			
Arsenic	NE	D mg/L		0.0010	1	12/30/16 16:10	01/06/17 13:51	7440-38-2	
Chromium	NE			0.0010	1		01/06/17 13:51		
Lead	NE	-		0.0010	1		01/06/17 13:51		
Vanadium	NE	D mg/L		0.0050	1	12/30/16 16:10	01/06/17 13:51	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical	Method: EPA 6	020 Preparat	tion Met	nod: EPA	A 3005A			
Arsenic, Dissolved	NE			1.0	1		01/06/17 15:45	7///0-38 3	
Chromium, Dissolved	NE	_		1.0	1		01/06/17 15:45		
Lead, Dissolved	NE			1.0	1		01/06/17 15:45		
Vanadium Dissolved	NE	og/L		1.0	t a	12/30/10 10:13	04/00/17 15:45	74.5.52-1	

REPORT OF LABORATORY ANALYSIS

5.0

ND

ug/L

12/30/16 18:15 01/06/17 15:45 7440-62-2

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Sample: MW-86A	Lab ID: 2047	989003	Collected: 12/29/1	6 09:50	Received: 12	19/10 TOOK	atrx: Water	·		
Parameters	Results	Units	Report Limit	DF	Preparation		CAS No.	Qual		
7470 Mercury	Analytical Method: EPA 7470 Preparation Met									
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:35	7439-97-6			
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	70 Preparation Met	nod: EP/	A 7470					
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:52	7439-97-6			
8270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 82	70 by SIM Preparat	ion Meth	nod: EPA 3510					
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	83-32-9			
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	208-96-8			
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	120-12-7			
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	56-55-3			
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	50-32-8			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	205-99-2			
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	191-24-2			
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	207-08-9			
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	218-01-9			
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/05/17 00:58				
Fluoranthene	ND	ug/L	0.10	1		01/05/17 00:58				
Fluorene	ND	ug/L	0.10	1		01/05/17 00:58				
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/05/17 00:58				
2-Methylnaphthalene	ND	ug/L	0.10	1		01/05/17 00:58				
Naphthalene	ND	ug/L	0.10	1		01/05/17 00:58				
Phenanthrene	ND	ug/L ug/L	0.10	1		01/05/17 00:58				
Pyrene	0.13	_	0.10	1						
Surrogates	0.13	ug/L	0.10	t	01/04/17 09:09	01/05/17 00:58	129-00-0			
2-Fluorobiphenyl (S)	77	%.	25-150	1	01/04/17 00:00	01/05/17 00:58	321 60 9			
Terphenyl-d14 (S)	74	%.	25-150	1		01/05/17 00:58				
				Į.	01/04/17 09.09	01/05/17 00.56	17 10-51-0			
8260 MSV Low Level	Analytical Meth									
Acetone	16.8	ug/L	4.0	1		01/03/17 16:24		C9		
Benzene	ND	ug/L	0.50	1	V	01/03/17 16:24				
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 16:24				
Bromoform	ND	ug/L	0.50	1		01/03/17 16:24				
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:24				
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:24	78-93-3			
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:24	75-15-0	L3		
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:24	56-23-5			
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:24	108-90-7			
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:24	75-00-3			
Chloroform	ND	ug/L	0.50	1		01/03/17 16:24	67-66-3			
Chloromethane	ND	ug/L	0.50	1		01/03/17 16:24	74-87-3			
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 16:24	96-12-8			
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 16:24				
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 16:24				
		_								
Dichlorodifluoromethane	ND	ua/L	1.0	1		01/03/17 16:24	75-71-8			
Dichlorodifluoromethane 1,1-Dichloroethane	ND ND	ug/L ug/L	1.0 0.50	1 1		01/03/17 16:24 01/03/17 16:24				

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

o-Terphenyl (S)

Surrogates

8021 GCV BTEX, MTBE, GRO

Gasoline Range Organics

4-Bromofluorobenzene (S)

Date: 01/16/2017 01:10 PM

2047989

Sample: MW-86A Lab ID: 2047989003 Collected: 12/29/16 09:50 Water Parameters Results Units Report Limit DF CAS No. Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 1,1-Dichloroethene ND 0.50 01/03/17 16:24 75-35-4 ug/L 1 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/03/17 16:24 156-59-2 trans-1,2-Dichloroethene ND ug/L 0.50 1 01/03/17 16:24 156-60-5 1,2-Dichloropropane ND ug/L 0.50 1 01/03/17 16:24 78-87-5 ug/L cis-1,3-Dichloropropene ND 0.50 1 01/03/17 16:24 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 01/03/17 16:24 10061-02-6 1 Ethylbenzene ND ug/L 0.50 1 01/03/17 16:24 100-41-4 2-Hexanone ND ug/L 1.0 1 01/03/17 16:24 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 1 01/03/17 16:24 98-82-8 Methyl acetate NΩ ug/L 2.0 1 01/03/17 16:24 79-20-9 Methylene Chloride ND 0.50 ug/L 1 01/03/17 16:24 75-09-2 4-Methyl-2-pentanone (MIBK) ND 01/03/17 16:24 108-10-1 ug/L 1.0 1 Methyl-tert-butyl ether 0.50 11 ug/L 1 01/03/17 16:24 1634-04-4 Styrene ND 1.0 01/03/17 16:24 100-42-5 ug/L 1 1.1.2.2-Tetrachloroethane ND 0.50 ug/L 1 01/03/17 16:24 79-34-5 Tetrachloroethene ND 0.50 ug/L 1 01/03/17 16:24 127-18-4 Toluene ND 0.50 01/03/17 16:24 108-88-3 ua/L 1 1,1,1-Trichloroethane ND 0.50 ug/L 1 01/03/17 16:24 71-55-6 1,1,2-Trichloroethane ND ug/L 0.50 1 01/03/17 16:24 79-00-5 Trichloroethene ND 0.50 01/03/17 16:24 79-01-6 ua/L 1 Trichlorofluoromethane ND uq/L 0.50 01/03/17 16:24 75-69-4 1 Vinyl chloride NΩ ug/L 0.50 1 01/03/17 16:24 75-01-4 m&p-Xylene ND ug/L 2.0 1 01/03/17 16:24 179601-23-1 o-Xylene ND ug/L 1.0 1 01/03/17 16:24 95-47-6 Surrogates Dibromofluoromethane (S) 116 01/03/17 16:24 1868-53-7 % 72-126 4-Bromofluorobenzene (S) 95 %. 68-124 01/03/17 16:24 460-00-4 1 Toluene-d8 (S) 103 %. 79-119 01/03/17 16:24 2037-26-5 1 Sample: MW-MP5A Lab ID: 2047989004 Collected: 12/29/16 10:48 Received: 12/29/16 14:00 Matrix: Water **Parameters** Results Units DF Report Limit Prepared Analyzed CAS No. Qual 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND 0.50 mg/L 1 01/04/17 08:39 01/10/17 19:17 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 01/04/17 08:39 01/10/17 19:17 Surrogates n-Pentacosane (S) 33 %. 16-137 1 01/04/17 08:39 01/10/17 19:17 629-99-2

REPORT OF LABORATORY ANALYSIS

10-121

50.0

44-148

1

1

01/04/17 08:39 01/10/17 19:17 84-15-1

01/05/17 05:55

01/05/17 05:55 460-00-4

42

ND

86

%.

ug/L

%.

Analytical Method: EPA 8015/8021

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

PUMA TERMINAL MW SAMPLING

Pace Project No .:

Bromodichloromethane

Date: 01/16/2017 01:10 PM

Bromoform

Bromomethane

2-Butanone (MEK)

2047989 Sample: MW-MP5A Lab ID: 2047989004 Collected: 12/29/16 10:48 Water Parameters Results Units Report Limit CAS No. Qual 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 Arsenic 0.0070 ma/L 0.0010 1 12/30/16 16:10 01/06/17 13:55 7440-38-2 Chromium ND mg/L 0.0010 12/30/16 16:10 01/06/17 13:55 7440-47-3 1 Lead ND ma/L 0.0010 1 12/30/16 16:10 01/06/17 13:55 7439-92-1 Vanadium ND mg/L 0.0050 1 12/30/16 16:10 01/06/17 13:55 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved 5.2 1.0 ug/L 12/30/16 18:15 01/06/17 15:49 7440-38-2 Chromium, Dissolved ND ug/L 1.0 1 12/30/16 18:15 01/06/17 15:49 7440-47-3 Lead, Dissolved ND 1 12/30/16 18:15 01/06/17 15:49 7439-92-1 ug/L 1.0 Vanadium, Dissolved ND 5.0 12/30/16 18:15 01/06/17 15:49 7440-62-2 ug/L 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury ND 0.20 12/30/16 17:49 01/03/17 13:37 7439-97-6 ug/L 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury, Dissolved ND 0.20 1 12/30/16 17:49 01/03/17 12:58 7439-97-6 ug/L 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene ND ug/L 0.10 1 01/04/17 09:09 01/05/17 01:17 83-32-9 Acenaphthylene ND 0.10 ug/L 1 Anthracene ND 0.10 ug/L 1 01/04/17 09:09 01/05/17 01:17 120-12-7 Benzo(a)anthracene ND 0.10 ug/L 1 01/04/17 09:09 01/05/17 01:17 56-55-3 Benzo(a)pyrene ND ug/L 0.10 1 01/04/17 09:09 01/05/17 01:17 50-32-8 Benzo(b)fluoranthene ND ug/L 0.10 1 Benzo(g,h,i)perylene ND ug/L 0.10 01/04/17 09:09 01/05/17 01:17 1 191-24-2 Benzo(k)fluoranthene ND ug/L 0.10 01/04/17 09:09 01/05/17 01:17 207-08-9 1 Chrysene ND ug/L 0.10 01/04/17 09:09 01/05/17 01:17 218-01-9 Dibenz(a,h)anthracene ND ug/L 0.10 Fluoranthene ND ug/L 0.10 1 206-44-0 Fluorene NΩ ug/L 0.10 1 Indeno(1,2,3-cd)pyrene NΩ ug/L 0.10 1 01/04/17 09:09 01/05/17 01:17 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 Naphthalene ND ua/L 0.10 1 Phenanthrene NΩ ug/L 0.10 1 01/04/17 09:09 01/05/17 01:17 85-01-8 Pyrene ND ug/L 0.10 1 Surrogates 2-Fluorobiphenyl (S) 82 %. 25-150 1 01/04/17 09:09 01/05/17 01:17 321-60-8 Terphenyl-d14 (S) 79 %. 25-150 1 01/04/17 09:09 01/05/17 01:17 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 7.9 ug/L 4.0 01/03/17 16:42 67-64-1 1 C9 Benzene ND ug/L 0.50 1 01/03/17 16:42 71-43-2

REPORT OF LABORATORY ANALYSIS

0.50

0.50

0.50

2.0

1

1

ND

ND

ND

ND

ug/L

ug/L

ug/L

ug/L

01/03/17 16:42 75-27-4

01/03/17 16:42 75-25-2

01/03/17 16:42 74-83-9

01/03/17 16:42 78-93-3

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ANALYTICAL RESULT

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/16/2017 01:10 PM

2047989

Sample: MW-MP5A	Lab ID: 204	7989004	Collected:	12/29/16	5 10.48 \ Re	ceiver: 292946 1400 A	/atrix: Water	
Parameters	Results	Units	Report	Limit	DF (II)	ed Led	CAS No.	Qua
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260			(O'LICEN		
Carbon disulfide	ND	ug/L		1.0	1	01/03/17 16:42	75-15-0	L3
Carbon tetrachloride	ND	ug/L		0.50	1	01/03/17 16:42	56-23-5	
Chlorobenzene	ND	ug/L		0.50	1	01/03/17 16:42	108-90-7	
Chloroethane	ND	ug/L		0.50	1	01/03/17 16:42	75-00-3	
Chloroform	ND	ug/L		0.50	1	01/03/17 16:42	67-66-3	
Chloromethane	ND	ug/L		0.50	1	01/03/17 16:42	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L		0.20	1	01/03/17 16:42	96-12-8	
Dibromochloromethane	ND	ug/L		0.50	1	01/03/17 16:42	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L		1.0	1	01/03/17 16:42	106-93-4	
Dichlorodifluoromethane	ND	ug/L		1.0	1	01/03/17 16:42	75-71 - 8	
1,1-Dichloroethane	ND	ug/L		0.50	1	01/03/17 16:42	75-34-3	
1,2-Dichloroethane	ND	ug/L		0.50	1	01/03/17 16:42	107-06-2	
1,1-Dichloroethene	ND	ug/L		0.50	1	01/03/17 16:42	75-35-4	
cis-1,2-Dichloroethene	1.0	ug/L		1.0	1	01/03/17 16:42		
rans-1,2-Dichloroethene	0.90	ug/L		0.50	1	01/03/17 16:42	156-60-5	
1,2-Dichloropropane	ND	ug/L		0.50	1	01/03/17 16:42		
sis-1,3-Dichloropropene	ND	ug/L		0.50	1	01/03/17 16:42		
rans-1,3-Dichloropropene	ND	ug/L		0.50	1	01/03/17 16:42	10061-02-6	
Ethylbenzene	ND	ug/L		0.50	1	01/03/17 16:42		
2-Hexanone	ND	ug/L		1.0	1	01/03/17 16:42		
sopropylbenzene (Cumene)	ND	ug/L		1.0	1	01/03/17 16:42		
Methyl acetate	ND	ug/L		2.0	1	01/03/17 16:42	79-20-9	
Methylene Chloride	ND	ug/L		0.50	1	01/03/17 16:42		
4-Methyl-2-pentanone (MIBK)	ND	ug/L		1.0	1	01/03/17 16:42		
Methyl-tert-butyl ether	2.5	ug/L		0.50	· 1	01/03/17 16:42		
Styrene	ND	ug/L		1.0	1	01/03/17 16:42		
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50	1	01/03/17 16:42		
Tetrachloroethene	ND	ug/L		0.50	1	01/03/17 16:42		
Toluene	ND	ug/L		0.50	1	01/03/17 16:42		
1,1,1-Trichloroethane	ND	ug/L		0.50	1	01/03/17 16:42		
1,1,2-Trichloroethane	ND	ug/L		0.50	1	01/03/17 16:42		
Trichloroethene	0.64	ug/L		0.50	1	01/03/17 16:42		
Trichlorofluoromethane	ND	ug/L		0.50	1	01/03/17 16:42		
Vinyl chloride	ND	ug/L		0.50	1	01/03/17 16:42		
m&p-Xylene	ND	ug/L		2.0	1	01/03/17 16:42		
o-Xylene	ND	ug/L		1.0	1	01/03/17 16:42		
Surrogates	,,,,	29,1		1.0	'	0 11001 T 10.42	30-47-0	
Dibromofluoromethane (S)	116	%.	7	2-126	1	01/03/17 16:42	1868-53-7	
4-Bromofluorobenzene (S)	100	%.		8-124	1	01/03/17 16:42		
Toluene-d8 (S)	102	%.		9-119	1	01/03/17 16:42		

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/16/2017 01:10 PM

2047989

Pace Project No.: 2047989					131	ustile 1	<i> 6 </i>	
Sample: MW-DP5	Lab ID: 204	7989005	Collected: 12/29/	16 11:37	Z Emaliand 19	429/26/100/	atrix: Water	
Parameters	Results	Units	Report Limit	DF	President		CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 80	015B Modified Prepa	aration N				
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 19:44		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 19:44		
n-Pentacosane (S)	33	%.	16-137	1	01/04/17 08:39	01/10/17 19:44	629-99-2	
o-Terphenyl (S)	39	%.	10-121	1	01/04/17 08:39	01/10/17 19:44	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/05/17 06:22		
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/05/17 06:22	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 60	020 Preparation Me	thod: EF	PA 3010			
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 14:07	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	020 Preparation Me	thod: EF	PA 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:53	7440-62-2	
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Me	thod: EF	PA 7470			
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:39	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Me	thod: EF	PA 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:00	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	thod: EPA 8	270 by SIM Prepara	tion Me	thod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10			01/05/17 01:37		
Benzo(b)fluoranthene	ND	ug/L	0.10			01/05/17 01:37		
Benzo(g,h,i)perylene	ND	ug/L	0.10			01/05/17 01:37		
Benzo(k)fluoranthene	ND	ug/L	0.10			01/05/17 01:37		
Chrysene	ND	ug/L	0.10			01/05/17 01:37		
Dibenz(a,h)anthracene	ND	ug/L	0.10			01/05/17 01:37		
Fluoranthene	ND	ug/L	0.10			01/05/17 01:37		
Fluorene	ND	ug/L ug/L	0.10			01/05/17 01:37		
Indeno(1,2,3-cd)pyrene	ND	ug/L ug/L	0.10			01/05/17 01:37		
2-Methylnaphthalene	ND	ug/L ug/L	0.10			01/05/17 01:37		
Naphthalene	ND ND	_	0.10			01/05/17 01:37		
•		ug/L						
Phenanthrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	92-01-8	

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

Sample: MW-DP5

Date: 01/16/2017 01:10 PM

Lab ID: 2047989005

Sample: MW-DF3	Lau ID. 204	7969003	Collected. 12/29/1	0 11.51	Ricelyen, 12	(1/8/11/K)	CAS N=	
Parameters	Results	Units	Report Limit	DF	Pre	Heren's	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Met	nod: EPA 82	70 by SIM Preparat	ion Met		Little		
Pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	75	%.	25-150	1		01/05/17 01:37		
Terphenyl-d14 (S)	71	%.	25-150	1	01/04/17 09:09	01/05/17 01:37	1718-51-0	
8260 MSV Low Level	Analytical Metl	hod: EPA 50	30B/8260					
Acetone	12.0	ug/L	4.0	1		01/03/17 16:59	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 16:59	71-43-2	
Bromodichloromethane	ND	u g /L	0.50	1		01/03/17 16:59	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 16:59	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:59	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:59	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:59	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:59	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:59	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/03/17 16:59	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/03/17 16:59	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 16:59		
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 16:59		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 16:59		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 16:59		
1.1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:59		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:59		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:59		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 16:59		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:59		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 16:59		
cis-1,3-Dichloropropene	ND	ug/L ug/L	0.50	1		01/03/17 16:59		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:59		
Ethylbenzene	ND	ug/L ug/L	0.50	1		01/03/17 16:59		
2-Hexanone	ND	-		1				
Isopropylbenzene (Cumene)		ug/L	1.0			01/03/17 16:59		
	ND	ug/L	1.0	1		01/03/17 16:59		
Methylacetate	ND	ug/L	2.0	1		01/03/17 16:59		
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 16:59		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 16:59		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/03/17 16:59		
Styrene	ND	ug/L	1.0	1		01/03/17 16:59		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:59		
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:59		
Toluene	ND	ug/L	0.50	1		01/03/17 16:59		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:59		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:59		
Trichloroethene	ND	ug/L	0.50	1		01/03/17 16:59		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:59	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 16:59	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 16:59	179601-23-1	

St. Rose, LA 70087 (504)469-0333



4-Methyl-2-pentanone (MIBK)

Date: 01/16/2017 01:10 PM

ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Project: PUMA TERMIN Pace Project No.: 2047989	NAL MW SAMPLING	;				Negran \	Jä	
Sample: MW-DP5	Lab ID: 204	7989005	Collected: 12/29/1	6 11:37	D-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	29/11/01/4:05/2	a vix Water	
Parameters	Results	Units	Report Limit	DF	Prepare 12/	THE REAL PROPERTY.	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	hod: EPA 50	030B/8260				·	
o-Xylene	ND	ug/L	1.0	1		01/03/17 16:59	95-47-6	
Surrogates								
Dibromofluoromethane (S)	113	%.	72-126	1		01/03/17 16:59	9 1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/03/17 16:59	9 460-00-4	
Toluene-d8 (S)	102	%.	79-119	1		01/03/17 16:59	9 2037-26-5	
Sample: FB-122916	Lab ID; 204	7989006	Collected: 12/29/1	6 11:42	Received: 12/	29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	 0 15 /8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/05/17 06:49	Э	
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/05/17 06:49	9 460-00-4	
8260 MSV Low Level	Analytical Metl	hod: EPA 5	030B/8 260					
Acetone	27.3	ug/L	4.0	1		01/03/17 17:1	7 67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 17:1	7 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 17:1	7 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 17:1	7 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 17:1		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 17:1		
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 17:1		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 17:1		
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 17:1		
Chloroethane	ND	ug/L	0.50	1		01/03/17 17:1		
Chloroform	ND	ug/L	0.50	1		01/03/17 17:1		
Chloromethane	ND	ug/L	0.50	1		01/03/17 17:1		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 17:1		
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 17:1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 17:1		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 17:1		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 17:1		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 17:1		
1,1-Dichloroethene cis-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 17:1		
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 17:1		
	ND	ug/L	0.50	1		01/03/17 17:1		
1,2-Dichloropropane cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 17:1		
• •	ND	ug/L	0.50	1		01/03/17 17:1		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1			7 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 17:1		
2-Hexanone	ND	ug/L	1.0	1		01/03/17 17:1		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 17:1		
Methyl acetate	ND	ug/L	2.0	1		01/03/17 17:1		
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 17:1		
Z-Methyl-Z-pentanone (MIRK)	ND.	uall	1.0	- 4		04/09/47 47:4	7 100 10 1	

REPORT OF LABORATORY ANALYSIS

1.0

ND

ug/L

01/03/17 17:17 108-10-1



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/16/2017 01:10 PM

2047989

Sample: FB-122916	Lab ID: 204	7989006	Collected: 12/29/1	6 11:42	Received: 1	12/29/16 14:00	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/03/17 17:17	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 17:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 17:17	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 17:17	127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 17:17	′ 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 17:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 17:17	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/03/17 17:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 17:17	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 17:17	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 17:17	7 179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/03/17 17:17	95-47-6	
Surrogates								
Dibromofluoromethane (S)	116	%.	72-126	1		01/03/17 17:17	7 1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/03/17 17:17	460-00-4	
Toluene-d8 (S)	103	%.	79-119	1		01/03/17 17:17	2037-26-5	





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

QC Batch:

71377

Analysis Method:

EPA 8015/8021

QC Batch Method:

EPA 8015/8021

Analysis Description:

8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples:

2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

METHOD BLANK: 298565

Matrix: Water

Associated Lab Samples:

2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

		Par	ameter
Gasoli	ne Ra	ange (Organics

Blank Result ND Reporting Limit

Analyzed Qualifiers

Gasoline Range Organics	ug/L
4-Bromofluorobenzene (S)	%.

01/05/17 03:16 50.0 89 44-148 01/05/17 03:16

METHOD BLANK: 298931 Associated Lab Samples:

Matrix: Water

2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

ND

89

Parameter	
Gasoline Range Organics	

Blank Units Result ug/L

%.

Units

Limit Analyzed 01/05/17 20:19 50.0 44-148 01/05/17 20:19 Qualifiers

Qualifiers

4-Bromofluorobenzene (S)

Matrix: Water

METHOD BLANK: 299195 Associated Lab Samples:

2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Blank	
Result	

Spike

Conc.

Reporting Limit

Reporting

Analyzed Qualifiers

61-136

44-148

44-148

Parameter
Gasoline Range Organics
4-Bromofluorobenzene (S)

4-Bromofluorobenzene (S)

Gasoline Range Organics 4-Bromofluorobenzene (S) 4-Bromofluorobenzene (S)

Date: 01/16/2017 01:10 PM

ug/L %.

Units

Units

ug/L

%.

%.

ND 90

50.0 01/06/17 12:25 44-148 01/06/17 12:25

90

LABORATORY CONTROL SAMPLE: 298566

Parameter	
Gasoline Range Organics	
4-Bromofluorobenzene (S)	

LCS LCS % Rec Limits Result % Rec 454 500 91 89

LABORATORY CONTROL SAMPLE:

Parameter

298932

702	- · ·				
	Spike	LCS	LCS	% Rec	
Units	Conc.	Result	% Rec	Limits	Qualifiers
ug/L	500	467	93	61-136	
%.			91	44-148	
%			92	44-148	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the resulf.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

LABORATORY CONTROL SAI	MPLE: 29	9196										
_			Spike	LCS		LCS	% Rec					
Parameter		Units	Conc.	Resu	lt	% Rec	Limits	Qι	ıalifiers			
Gasoline Range Organics		ug/L	500		472	94	61-	-136		-		
4-Bromofluorobenzene (S)		%.				90	44	-148				
4-Bromofluorobenzene (S)		%.				90	44	-148				
MATRIX SPIKE & MATRIX SPI	KE DUPLK	DATE: 29885	6 MS	MSD	298857							
MATRIX SPIKE & MATRIX SPI	KE DUPLIO	CATE: 29885 2047989003 Result		MSD Spike Conc.	298857 MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
Parameter		2047989003	MS Spike	Spike	MS	Result				RPD 1	RPD	Qua
Parameter Gasoline Range Organics	Units	2047989003 Result	MS Spike Conc.	Spike Conc.	MS Result	Result	% Rec	% Rec	Limits	1	RPD	Qua
Parameter Gasoline Range Organics 4-Bromofluorobenzene (S)	Units ug/L	2047989003 Result	MS Spike Conc.	Spike Conc.	MS Result	Result 555	% Rec	% Rec 103	Limits 15-147	1	RPD	Qua
Parameter Gasoline Range Organics 4-Bromofluorobenzene (S) 4-Bromofluorobenzene (S) 4-Bromofluorobenzene (S)	Units ug/L %.	2047989003 Result	MS Spike Conc.	Spike Conc.	MS Result	Result 555	% Rec 104 93	% Rec 103 93	Limits 15-147 44-148	1	RPD	Qua



Project:

PUMA TERMINAL MW SAMPLING

Units

ug/L

Pace Project No.:

2047989

QC Batch:

71210

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description:

7470 Mercury

Associated Lab Samples:

2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297858 Associated Lab Samples:

Matrix: Water 2047989002, 2047989003, 2047989004, 2047989005

> Blank Result

Reporting

Parameter

Parameter

Parameter

Date: 01/16/2017 01:10 PM

Units

Limit

Analyzed

Qualifiers

Mercury

ug/L

ND

01/03/17 13:02 0.20

LABORATORY CONTROL SAMPLE: 297859

Spike

LCS Result

LCS % Rec % Rec Limits

Qualifiers

Mercury

Units ug/L

Conc.

1.0

80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

297860

MSD

297861 MS

MSD

101

MS MSD

% Rec

Max RPD RPD

2047949001

Spike Conc.

Spike Conc.

Result

% Rec

% Rec

Limits

Mercury

Result ND

MS

Result 1.0

1.0

100

75-125

20

Qual



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

QC Batch:

71229

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description:

7470 Mercury Dissolved

Associated Lab Samples:

2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297980

Matrix: Water

Associated Lab Samples:

2047989002, 2047989003, 2047989004, 2047989005

Blank

Spike

Conc.

Parameter

Parameter

Units

Result

Limit Analyzed Qualifiers

Mercury, Dissolved

ug/L

ND

0.20 01/03/17 12:08

LABORATORY CONTROL SAMPLE: 297981

LCS

LCS % Rec % Rec Limits

Qualifiers

Mercury, Dissolved

Date: 01/16/2017 01:10 PM

Units ug/L

1.1

Result

106

80-120



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

QC Batch:

71212

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3010

Analysis Description:

6020 MET

Associated Lab Samples:

2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297866

Matrix: Water

Associated Lab Samples:

Date: 01/16/2017 01:10 PM

2047989002, 2047989003, 2047989004, 2047989005

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/06/17 10:19	
Chromium	mg/L	ND	0.0010	01/06/17 10:19	
Lead	mg/L	ND	0.0010	01/06/17 10:19	
Vanadium	mg/L	ND	0.0050	01/06/17 10:19	

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0,020	100	83-115	
Chromium	mg/L	.02	0.020	99	85-115	
Lead	mg/L	.02	0.019	96	84-115	
Vanadium	mg/L	.02	0.019	97	81-115	

MATRIX SPIKE & MATRIX SF	IKE DUPLIC	CATE: 29786	_		297869							
-		00.47007004	MS	MSD	• • • •	1105	110	1100	67 P			
		2047967004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	ND	.02	.02	0.018	0.019	88	91	80-120	3	20	
Chromium	mg/L	0.024	.02	.02	0.042	0.044	91	100	80-120	4	20	
Lead	mg/L	ND	.02	.02	0.020	0.021	100	103	80-120	3	20	
Vanadium	mg/L	ND	.02	.02	0.020	0.021	95	100	80-120	5	20	



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

QC Batch:

71231

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3005A

Analysis Description:

6020 MET Dissolved

Associated Lab Samples:

2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297988

Matrix: Water

Associated Lab Samples:

Date: 01/16/2017 01:10 PM

2047989002, 2047989003, 2047989004, 2047989005

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND .	1.0	01/06/17 10:26	
Chromium, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Lead, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Vanadium, Dissolved	ug/L	ND	5.0	01/06/17 10:26	

LABORATORY CONTROL SAMPLE:	297989	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	. 19.8	99	80-120	
Chromium, Dissolved	ug/L	20	19.7	98	80-120	
Lead, Dissolved	ug/L	20	19.0	95	80-120	
Vanadium, Dissolved	ug/L	20	19.5	97	80-120	

MATRIX SPIKE & MATRIX SF	PIKE DUPLIC	CATE: 29902	6		299027							
			MS	MSD								
		2047967002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic, Dissolved	ug/L	ND	20	20	19.2	19.1	96	95	75-125	1	20	-
Chromium, Dissolved	ug/L	ND	20	20	19.2	19.2	95	96	75-125	0	20	
Lead, Dissolved	ug/L	ND	20	20	18.8	18.9	94	95	75-125	1	20	
Vanadium, Dissolved	ug/L	ND	20	20	20.6	20.8	92	93	75-125	1	20	



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

QC Batch:

71267

Analysis Method:

EPA 5030B/8260

QC Batch Method:

EPA 5030B/8260

Analysis Description:

8260 MSV Low Level

Associated Lab Samples:

2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

METHOD BLANK: 298068

Matrix: Water

Associated Lab Samples:

2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1-Dichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1-Dichloroethene	ug/L	ND	0.50	01/03/17 10:46	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/03/17 10:46	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/03/17 10:46	
1,2-Dichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,2-Dichloropropane	ug/L	ND	0.50	01/03/17 10:46	
2-Butanone (MEK)	ug/L	ND	2.0	01/03/17 10:46	
2-Hexanone	ug/L	ND	1.0	01/03/17 10:46	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/03/17 10:46	
Acetone	ug/L	ND	4.0	01/03/17 10:46	
Benzene	ug/L	ND	0.50	01/03/17 10:46	
Bromodichloromethane	ug/L	ND	0.50	01/03/17 10:46	
Bromoform	ug/L	ND	0.50	01/03/17 10:46	
Bromomethane	ug/L	ND	0.50	01/03/17 10:46	
Carbon disulfide	ug/L	ND	1.0	01/03/17 10:46	
Carbon tetrachloride	ug/L	ND	0.50	01/03/17 10:46	
Chlorobenzene	ug/L	ND	0.50	01/03/17 10:46	
Chloroethane	ug/L	ND	0.50	01/03/17 10:46	
Chloroform	ug/L	ND	0.50	01/03/17 10:46	
Chloromethane	ug/L	ND	0.50	01/03/17 10:46	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/03/17 10:46	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/03/17 10:46	
Dibromochloromethane	ug/L	ND	0.50	01/03/17 10:46	
Dichlorodifluoromethane	ug/L	ND	1.0	01/03/17 10:46	
Ethylbenzene	ug/L	ND	0.50	01/03/17 10:46	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/03/17 10:46	
m&p-Xylene	ug/L	ND	2.0	01/03/17 10:46	
Methyl acetate	ug/L	ND	2.0	01/03/17 10:46	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/03/17 10:46	
Methylene Chloride	ug/L	ND	0.50	01/03/17 10:46	
o-Xylene	ug/L	ND	1.0	01/03/17 10:46	
Styrene	ug/L	ND	1.0	01/03/17 10:46	
Tetrachioroethene	ug/L	ND	0.50	01/03/17 10:46	
Toluene	ug/L	ND	0.50	01/03/17 10:46	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/03/17 10:46	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/03/17 10:46	
Trichloroethene	ug/L	ND	0.50	01/03/17 10:46	
Trichlorofluoromethane	ug/L	ND	0.50	01/03/17 10:46	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

METHOD BLANK: 298068

Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	0.50	01/03/17 10:46	
4-Bromofluorobenzene (S)	%.	98	68-124	01/03/17 10:46	
Dibromofluoromethane (S)	%.	102	72-126	01/03/17 10:46	
Toluene-d8 (S)	%.	100	79-119	01/03/17 10:46	

METHOD BLANK: 298394

Matrix: Water

Date: 01/16/2017 01:10 PM

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1-Dichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1-Dichloroethene	ug/L	ND	0.50	01/04/17 10:25	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/04/17 10:25	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/04/17 10:25	
1,2-Dichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,2-Dichloropropane	ug/L	ND	0.50	01/04/17 10:25	
2-Butanone (MEK)	ug/L	ND	2.0	01/04/17 10:25	
2-Hexanone	ug/L	ND	1.0	01/04/17 10:25	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/04/17 10:25	
Acetone	ug/L	ND	4.0	01/04/17 10:25	
Benzene	ug/L	ND	0.50	01/04/17 10:25	
Bromodichloromethane	ug/L	ND	0.50	01/04/17 10:25	
Bromoform	ug/L	ND	0.50	01/04/17 10:25	
Bromomethane	ug/L	ND	0.50	01/04/17 10:25	
Carbon disulfide	ug/L	ND	1.0	01/04/17 10:25	
Carbon tetrachloride	ug/L	ND	0.50	01/04/17 10:25	
Chlorobenzene	ug/L	ND	0.50	01/04/17 10:25	
Chloroethane	ug/L	ND	0.50	01/04/17 10:25	
Chloroform	ug/L	ND	0.50	01/04/17 10:25	
Chloromethane	ug/L	ND	0.50	01/04/17 10:25	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/04/17 10:25	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/04/17 10:25	
Dibromochloromethane	ug/L	ND	0.50	01/04/17 10:25	
Dichlorodifluoromethane	ug/L	ND	1.0	01/04/17 10:25	
Ethylbenzene	ug/L	ND	0.50	01/04/17 10:25	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/04/17 10:25	
m&p-Xylene	ug/L	ND	2.0	01/04/17 10:25	
Methyl acetate	ug/L	ND	2.0	01/04/17 10:25	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/04/17 10:25	
Methylene Chloride	ug/L	ND	0.50	01/04/17 10:25	
o-Xylene	ug/L	ND	1.0	01/04/17 10:25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

METHOD BLANK: 298394

Matrix: Water

Associated Lab Samples:

Date: 01/16/2017 01:10 PM

2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Styrene	ug/L	ND	1.0	01/04/17 10:25	
Tetrachloroethene	ug/L	ND	0.50	01/04/17 10:25	
Toluene	ug/L	ND	0.50	01/04/17 10:25	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/04/17 10:25	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/04/17 10:25	
Trichloroethene	υg/L	ND	0.50	01/04/17 10:25	
Trichlorofluoromethane	ug/L	ND	0.50	01/04/17 10:25	
Vinyl chloride	ug/L	ND	0.50	01/04/17 10:25	
4-Bromofluorobenzene (S)	%.	98	68-124	01/04/17 10:25	
Dibromofluoromethane (S)	%.	102	72-126	01/04/17 10:25	
Toluene-d8 (S)	%.	100	79-119	01/04/17 10:25	

LABORATORY CONTROL SAMPLE:	298069					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	56.2	112	62-131	
1,1,2,2-Teirachloroethane	ug/L	50	45.9	92	15-179	
1,1,2-Trichloroethane	ug/L	50	47.0	94	58-144	
1,1-Dichloroethane	ug/L	50	55.0	110	63-129	
1,1-Dichloroethene	ug/L	50	54.7	109	51- 139	
1,2-Dibromo-3-chloropropane	ug/L	50	46.0	92	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	48.6	97	52-161	
1,2-Dichloroethane	ug/L	50	49.5	99	57-148	
1,2-Dichloropropane	ug/L	50	50.7	101	66-128	
2-Butanone (MEK)	ug/L	50	53.6	107	32-183	
2-Hexanone	ug/L	50	45.0	90	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	46.1	92	26-171	
Acetone	ug/L	50	51.2	102	22-165	
Benzene	ug/L	50	54.3	109	62-131	
Bromodichloromethane	ug/L	50	47.3	95	69-132	
Bromoform	ug/L	50	41.3	83	35-166	
Bromomethane	ug/L	50	45.5	91	34-158	
Carbon disulfide	ug/L	50	68.3	137	31-128 (_0
Carbon tetrachloride	∪g/L	50	51.8	104	54-144	
Chłorobenzene	ug/L	50	48.5	97	70-127	
Chloroethane	ug/L	50	40.1	80	17-195	
Chloroform	ug/L	50	51.3	103	73-134	
Chloromethane	ug/L	50	58.8	118	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.3	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	50.8	102	72-138	
Dibromochloromethane	υg/L	50	43.8	88	49-146	
Dichlorodifluoromethane	ug/L	50	55.1	110	10-179	
Ethylbenzene	ug/L	50	47.2	94	66-126	
Isopropylbenzene (Cumene)	ug/L	50	47.9	96	51-138	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
p-Xylene	ug/L	100	94.3	94	65-129	
thyl acetate	ug/L	50	52.1	104	20-142	
thyl-tert-butyl ether	ug/L	50	50.4	101	37-166	
thylene Chloride	ug/L	50	53.9	108	46-168	
(ylene	ug/L	50	46.7	93	65-124	
rene	ug/L	50	48.1	96	72-133	
rachloroethene	ug/L	50	47.8	96	46-157	
ue ne	ug/L	50	51.4	103	69-126	
ns-1,2-Dichloroethene	ug/L	50	54.0	108	60-129	
ns-1,3-Dichloropropene	ug/L	50	50.2	100	59-149	
hloroethene	ug/L	50	52.7	105	67-132	
chtorofluoromethane	ug/L	50	57.3	115	39-171	
yl chloride	ug/L	50	44.9	90	27-149	
Bromofluorobenzene (S)	%.			99	68-124	
romofluoromethane (S)	%.			109	72-126	
uene-d8 (S)	%.			102	79-119	

LABORATORY CONTROL SAMPLE:	298395					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.9	108	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	51.8	104	15-179	
1,1,2-Trichloroethane	ug/L	50	46.9	94	58-144	
1,1-Dichloroethane	ug/L	50	54.0	108	63-129	
1,1-Dichloroethene	ug/L	50	53.6	107	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	49.0	98	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	50.2	100	52-161	
1,2-Dichloroethane	ug/L	50	50.9	102	57-148	
1,2-Dichloropropane	ug/L	50	51.6	103	66-128	
2-Butanone (MEK)	ug/L	50	53.2	106	32-183	
2-Hexanone	ug/L	50	46.3	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	49.9	100	26-171	
Acetone	ug/L	50	51.6	103	22-165	
Benzene	ug/L	50	54.6	109	62-131	
Bromodichloromethane	u g /L	50	47.8	96	69-132	
Bromoform	ug/L	50	44.3	89	35-166	
Bromomethane	ug/L	50	45.3	91	34-158	
Carbon disulfide	ug/L	50	67.4	135	31-128 I	.0
Carbon tetrachloride	ug/L	50	51.7	103	54-144	
Chlorobenzene	ug/L	50	51.2	102	70-127	
Chloroethane	ug/L	50	38.2	76	17-195	
Chloroform	ug/L	50	50.0	100	73-134	
Chloromethane	ug/L	50	59.1	118	17-153	
cis-1,2-Dichloroethene	ug/L	50	52.1	104	68-129	
cis-1,3-Dichloropropene	ug/L	50	52.2	104	72-138	

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/16/2017 01:10 PM

2047989

ABORATORY CONTROL SAMPLE:	298395					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
ibromochloromethane	ug/L	50	47.1	94	49-146	
richlorodifluoromethane	ug/L	50	54.4	109	10-179	
hylbenzene	u g /L	50	50.1	100	66-126	
propylbenzene (Cumene)	ug/L	50	51.6	103	51-138	
&p-Xylene	ug/L	100	100	100	65-129	
ethyl acetate	ug/L	50	50.3	101	20-142	
thyl-terf-butyl ether	ug/L	50	48.7	97	37-166	
thylene Chloride	ug/L	50	52.8	106	46-168	
ylen e	ug/L	50	48.7	97	65-124	
ene	ug/L	50	50.6	101	72-133	
achloroethene	ug/L	50	50.6	101	46-157	
iene	ug/L	50	52.2	104	69-126	
s-1,2-Dichloroethene	ug/L	50	53.0	106	60-129	
is-1,3-Dichloropropene	ug/L	50	52.3	105	59-149	
chloroethene	ug/L	50	52.4	105	67-132	
chlorofluoromethane	ug/L	50	54.3	109	39-171	
yl chloride	ug/L	50	43.9	88	27-149	
romofluorobenzene (S)	%.			98	68-124	
romofluoromethane (S)	%.			104	72-126	
uene-d8 (S)	%.			101	79-119	

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	ATE: 29807	0		298071							
			MS	MSD								
		2047993001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	66.6	61.9	133	124	54-137	7	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	53.3	49.7	107	99	15-187	7	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	53.2	50.5	106	101	59-148	5	20	
1,1-Dichloroethane	ug/L	ND	50	50	64.1	60.8	128	122	59-133	5	20	
1,1-Dichloroethene	ug/L	ND	50	50	64.9	63.5	130	127	44-146	2	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	53.1	49.1	106	98	23-166	8	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	56.0	53.7	112	107	55-166	4	20	
1,2-Dichloroethane	ug/L	ND	50	50	57.3	55.0	115	110	56-154	4	20	
1,2-Dichloropropane	ug/L	ND	50	50	58.6	56.7	117	113	62-135	3	20	
2-Butanone (MEK)	ug/L	ND	50	50	63.4	59.2	127	118	20-205	7	20	
2-Hexanone	ug/L	ND	50	50	52.4	50.3	105	101	25-189	4	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	52.6	49.9	105	100	23-184	5	20	
Acetone	ug/L	36.2	50	50	75.8	73.3	79	74	11-217	3	20	
Benzene	ug/L	ND	50	50	61.8	60.1	124	120	52-141	3	20	
Bromodichloromethane	ug/L	ND	50	50	54.7	52.4	109	105	70-134	4	20	
Bromoform	ug/L	ND	50	50	46.8	44.7	94	89	37-171	5	20	
Bromomethane	ug/L	ND	50	50	55.4	46.7	111	93	34-155	17	20	
Carbon disulfide	ug/L	ND	50	50	87.9	77.9	175	155	28-130	12	20	M0
Carbon tetrachloride	ug/L	ND	50	50	62.8	59.2	126	118	48-146	6	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/16/2017 01:10 PM

2047989

MATRIX SPIKE & MATRIX SPIR	KE DUPLIK	CATE: 29807			298071							
			MS	MSD								
_		2047993001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chlorobenzene	ug/L	ND	50	50	55.4	53.8	111	108	67-129	3	20	
Chloroethane	ug/L	ND	50	50	50.5	44.1	101	88	12-192	14	20	
Chloroform	ug/L	ND	50	50	59.4	56.5	119	113	66-143	5	20	
Chloromethane	ug/L	0.54	50	50	67.1	62.4	133	124	14-155	7	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.7	58.6	123	117	56-141	5	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	57.9	54.9	1 16	110	70-139	5	20	
Dibromochloromethane	ug/L	ND	50	50	49.7	47.2	99	94	50-150	5	20	
Dichlorodifluoromethane	ug/L	ND	50	50	66.1	63.6	132	127	10-173	4	20	
Ethylbenzene	ug/L	ND	50	50	53.8	52.5	108	105	57-135	2	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	55.9	55.7	111	110	40-146	0	20	
m&p-Xylene	ug/L	ND	100	100	109	105	109	105	56-136	4	20	
Methyl acetate	ug/L	ND	50	50	57.2	54.7	114	109	10-142	4	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	58.5	55.0	117	110	35-176	6	20	
Methylene Chloride	ug/L	ND	50	50	61.9	57.7	124	115	45-166	7	20	
o-Xylene	ug/L	ND	50	50	53.2	51.4	106	103	57-133	4	20	
Styrene	ug/L	ND	50	50	54.3	52.0	109	104	58-144	4	20	
Tetrachloroethene	ug/L	ND	50	50	55.4	54.7	111	109	48-143	1	20	
Toluene	ug/L	ND	50	50	58.8	57.1	118	114	59-136	3	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	65,1	61.6	130	123	57-132	6	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	57.8	56.5	116	113	59-154	2	20	
Trichloroethene	ug/L	ND	50	50	62.0	59.2	124	118	58-140	5	20	
Trichlorofluoromethane	ug/L	ND	50	50	69.6	65.5	139	131	24-175		20	
Vinyl chloride	ug/L	ND	50	50	53.9	50.2	108	100	21-150		20	
4-Bromofluorobenzene (S)	%.						100	99	68-124		-	
Dibromofluoromethane (S)	%.						110	109	72-126			
Toluene-d8 (S)	%.						102	102	79-119			



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

QC Batch:

71320

Analysis Method:

EPA 8015B Modified

QC Batch Method:

EPA 3535

Analysis Description:

EPA 8015 ORO

Associated Lab Samples:

Associated Lab Samples:

2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 298333

Matrix: Water

2047989002, 2047989003, 2047989004, 2047989005

Blank Reporting Parameter Units Result Limit Qualifiers Analyzed Diesel Range Organic (C10-C28) mg/L ND 0.25 01/10/17 15:33 Oil Range Organics (>C28-C40) ND mg/L 0.50 01/10/17 15:33 n-Pentacosane (S) %. 28 16-137 01/10/17 15:33 o-Terphenyl (S) %. 35 10-121 01/10/17 15:33

LABORATORY CONTROL SAMPLE:	298334					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4		37	10-115	
n-Pentacosane (S)	%.			38	16-137	
o-Terphenyl (S)	%.			44	10-121	

MATRIX SPIKE & MATRIX SPIR	KE DUPLK	CATE: 29833	5		298336						
			MS	MSD							
		2047753015	Spike	Spike	MS	MSD	MS	MSD	% Rec	Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD RPD	Qual
Diesel Range Organic (C10- C28)	mg/L	ND	.4	.4	.24J	0.34	47	71	10-122	20	
n-Pentacosane (S)	%.						55	82	16-137		
o-Terphenyl (S)	%.						58	83	10-121		



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

QC Batch:

71324

Analysis Method:

EPA 8270 by SIM

QC Batch Method:

EPA 3510

Analysis Description:

8270 Water by SIM MSSV

Associated Lab Samples:

2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 298353

Matrix: Water

Associated Lab Samples:

Date: 01/16/2017 01:10 PM

 $2047989002,\, 2047989003,\, 2047989004,\, 2047989005$

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
					- Qualificia
2-Methylnaphthalene	ug/L	ND	0.10	01/04/17 16:59	
Acenaphthene	ug/L	ND	0.10	01/04/17 16:59	
Acenaphthylene	ug/L	ND	0.10	01/04/17 16:59	
Anthracene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(a)anthracene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(a)pyrene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Chrysene	ug/L	ND	0.10	01/04/17 16:59	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/04/17 16:59	
Fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Fluorene	ug/L	ND	0.10	01/04/17 16:59	
ndeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/04/17 16:59	
Naphthalene	ug/L	ND	0.10	01/04/17 16:59	
Phenanthrene	ug/L	ND	0.10	01/04/17 16:59	
Pyrene	ug/L	ND	0.10	01/04/17 16:59	
2-Fluorobiphenyl (S)	%.	78	25-150	01/04/17 16:59	
Terphenyl-d14 (S)	%.	84	25-150	01/04/17 16:59	

LABORATORY CONTROL SAMPL	E: 298354					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	 ug/L	4	3.3	84	35-150	
Acenaphthene	ug/L	4	3.5	89	35-150	
Acenaphthylene	ug/L	4	3.4	85	35-150	
Anthracene	ug/L	4	4.1	103	35-150	
Benzo(a)anthracene	ug/L	4	3.6	89	35-150	
Benzo(a)pyrene	ug/L	4	3.3	82	35-150	
Benzo(b)fluoranthene	ug/L	4	3.3	83	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.9	97	35-150	
Benzo(k)fluoranthene	ug/L	4	3.4	84	35-150	
Chrysene	ug/L	4	3.3	83	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.3	107	35-150	
Fluoranthene	ug/L	4	3.1	79	35-150	
Fluorene	ug/L	4	3.4	85	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.1	102	35-150	
Naphthalene	ug/L	4	3.2	80	35-150	
Phenanthrene	ug/L	4	3.6	90	35-150	
Pyrene	ug/L	4	3.2	80	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/16/2017 01:10 PM

2047989

LABORATORY CONTROL SAMPLE:	298354					
		Spîke	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			103	25-150	
Terphenyl-d14 (S)	%.			103	25-150	



QUALIFIERS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2047989

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N

Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71393

[M5]

A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

Date: 01/16/2017 01:10 PM

C9 Common Laboratory Contaminant.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in

associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Date: 01/16/2017 01:10 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047989002	EB-122916	EPA 3535	71320	EPA 8015B Modified	71622
2047989003	MW-86A	EPA 3535	71320	EPA 8015B Modified	71622
047989004	MW-MP5A	EPA 3535	71320	EPA 8015B Modified	71622
047989005	MW-DP5	EPA 3535	71320	EPA 8015B Modified	71622
2047989001	TB-122916	EPA 8015/8021	71377		
047989002	EB-122916	EPA 8015/8021	71377		
047989003	MW-86A	EPA 8015/8021	71377		
047989004	MW-MP5A	EPA 8015/8021	71377		
047989005	MW-DP5	EPA 8015/8021	71377		
047989006	FB-122916	EPA 8015/8021	71377		
047989002	EB-122916	EPA 3010	71212	EPA 6020	71238
047989003	MW-86A	EPA 3010	71212	EPA 6020	71238
047989004	MW-MP5A	EPA 3010	71212	EPA 6020	71238
047989005	MW-DP5	EPA 3010	71212	EPA 6020	71238
047989002	EB-122916	EPA 3005A	71231	EPA 6020	71239
047989003	MW-86A	EPA 3005A	71231	EPA 6020	71239
047989004	MW-MP5A	EPA 3005A	71231	EPA 6020	71239
047989005	MW-DP5	EPA 3005A	71231	EPA 6020	71239
047989002	EB-122916	EPA 7470	71210	EPA 7470	71243
047989003	MW-86A	EPA 7470	71210	EPA 7470	71243
047989004	MW-MP5A	EPA 7470	71210	EPA 7470	71243
047989005	MW-DP5	EPA 7470	71210	EPA 7470	71243
047989002	EB-122916	EPA 7470	71229	EPA 7470	71242
047989003	MW-86A	EPA 7470	71229	EPA 7470	71242
2047989004	MW-MP5A	EPA 7470	71229	EPA 7470	71242
2047989005	MW-DP5	EPA 7470	71229	EPA 7470	71242
047989002	EB-122916	EPA 3510	71324	EPA 8270 by SIM	71393
2047989003	MW-86A	EPA 3510	71324	EPA 8270 by SIM	71393
2047989004	MW-MP5A	EPA 3510	71324	EPA 8270 by SIM	71393
2047989005	MW-DP5	EPA 3510	71324	EPA 8270 by SIM	71393
047989001	TB-122916	EPA 5030B/8260	71267		
047989002	EB-122916	EPA 5030B/8260	71267		
047989003	MW-86A	EPA 5030B/8260	71267		
2047989004	MW-MP5A	EPA 5030B/8260	71267		
047989005	MW-DP5	EPA 5030B/8260	71267		
2047989006	FB-122916	EPA 5030B/8260	71267		

Pace Anal

WO#: 2047989

CHAIN-OF-CUSTODY / Analytical Request Document

ne Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

(WWW.pat:			Page:	of
Section A 2047989 Required Client Information:	Invoi	ction C nice Information:	-	2075256
Company: Arcaly Report To: Effects Calder	97 L	intion:		2010200
Address cité view Plasa Copy To:		npany Name:	REGULATORY AGENCY	DONESTIC NATED
Suite 401 23 165 km 1.3 cingmas	Addi	dress:	NPDES GROUND WAT	l
Email To: Purchase Order No.:	Refe	e Quole eronce:	F UST F RCRA	OTHER
Purchase Order No.: Purchase Order No.: Purchase Order No.: Project Name: Project Number: Project Number: Project Number: Project Number: Project Number:	Sacret 1' an Man	ne Project June Redendo	Site Location P R	
Requested Due Date/TAT: Shape Project Number: BOO2. 1608	Pace	es Profile #:		
315000			d Analysis Filtered (Y/N)	
Section D Matrix Codes	COLLECTED	Preservatives		
Required Client Information MATRIA 7 Social 9 6 Drinking Water DW 8 9				20
Water WT 8 0 composite Waste Water WW ½ დ start	COMPOSITE END/GRAB			JX999
Product P S S S Soil/Solid SL S U	COLL	Por Acid	S. 1005 6-20 Mother Mothers Sesidual Chlorine (Y/N)	
	LE TEMP AT CC	Unpreserved Unpreserved HySO ₄ HNO ₃ HOI NaOH Na ₂ S ₂ O ₃ Methanol Other CAnalysis Test I VOC/S 4245 VOC/S 4245 VOC/S 4245 URO 4055		· \\ \\
(A-Z, 0-9 / -) Air AR O U U U U U U U U U U U U U U U U U U	TEM!	# OF CONTAIL Unpreserved H ₂ SO ₃ HNO ₃ HCI NaOH Na ₂ S2 ₂ O ₃ Methanol Other VoCCs 43 VoCCs 43 VOCCs 43	S. JOUS Mesidual Ct	
	E PPLE	# OF CON Unpreserv Hyso, HCI HOS Naghanol Other Cother Voc/s	S JOCS Nethols Dissalva Residual	[1\]
Other OT DATE	TIME DATE TIME S		450	Pace Project No./ Lab I.D.
	izhall LAD L	4 74		
(5) / 42/(2		<u> </u>	<u> </u>	
2 EB-12291L WY 0- 3 MW-86A WY 0-		05 114 1 1 7 7	\\\	
4 MW- MOSA WY CO		<u> </u>	XXX I	
MV- MDSA VT W			^ ^ `` 	
	12/21/4 1142 =	4		
6 FB-12216				
8				
9				
10			_	
11				SAMPLE CONDITIONS
12 ADDITIONAL COMMENTS RELINQUISHED BY / A	FFILIATION DATE	TIME ACCEPTED BY / AFFILIATION	- / / / / / / / / / / / / / / / / / / /	1 7 7
	11000'S 12/4/12/	1400 Palla Just Par	2 0/29/1/6 1900 4	V NV
-001 10		Fed Exp		
1	dEp 6-32-140		e 12-30-16 0840 1.2	444
	ary proper	()	an an	7 1 1 1 1 1 1 1 1 1
	SAMPLER NAME AND SIGNATURE			
Pige ORIGINAL		Anzi colon	ed	Received on Ice (Y/N) Custody Sealed Cooler (Y/N) Samples Intac (Y/N)
٠ <u>٠</u>	SIGNATURE of SAMPLER:	MM DATE Signi		Rec Ic Seal Sam
₽		THAT (MAN)	y	07.45.140007

Sample Condition Upon Receips W0#:2047989

PM: JAR1

Due Date: 01/13/17

Calle	Jardines de Guaynabo Migina) Blq A-10 nabo, PR 00969		Project#	CLIENT: 98-ARCADISPI	₹
Courier:	Hired Courier ☐ Fed X	UP\$	□ DHL	□ USPS □ Customer	□ Other
Custody Seal on Cooler/Box Presen	t: [see COC]			Custody Seals intact: □\	∕es □No
Therm Fisher Therm Fisher Therm Fisher Therm Fisher	IR 6 Type of !	ce: We	Blue None	Samples on ice: [see	
Cooler Temperature: [see COC]	Temp should b	oe above free	ezing to 6°C	Date and Initials of person exacontents:	mining
Temp must be measured from Tempera	ture blank when present	C	Comments:		
Temperature Blank Present"?	ZYes □	in₀ □n/A 1			
Chain of Custody Present:	∕ÓYes □	lno □n/a 2			
Chain of Custody Complete:		lno □n/A 3	<u> </u>		
Chain of Custody Relinquished:	□yes □]No □N/A 4			
Sampler Name & Signature on COC): □Yes □	lno □n/A 5	5	<u> </u>	
Samples Arrived within Hold Time:		lno □n/A 6	3		
Sufficient Volume:	□yes □	No □N/A	7		<u> </u>
Correct Containers Used:	/QYes [lno □n/a 8	3	<u> </u>	
Filtered vol. Rec. for Diss. tests	□Yes□	INO □N/A S	<u> </u>		· · · · · · · · · · · · · · · · · · ·
Sample Labels match COC:		INo □N/A	10		
All containers received within mana precautionary and/or expiration date	es.	lNo □N/A	11		
All containers needing chemical probeen checked (except VOA, colifor	eservation have m, & O&G).]No □N/A	12		
All containers preservation checked compliance with EPA recommenda	d found to be in tion. □Yes □]No □N/A		oreserative added? □Yes □N cord lot no.: HNO3 H	0 2SO4
Headspace in VOA Vials (>6mm):	□Yes □	No EN/A	14		
Trip Blank Present:		₹No	15		
Client Notification/ Resolution:					
Person Contacted:	. <u> </u>			Date/Time:	
Comments/ Resolution:					

Sample Condition Upon Receipt

Pace Analytical	1000 Riverband, Blvd., Suite St, Rase, LA 70087	; F		•	Project #:	20
Courier:			□ UF	PS	□ DHL	☐ USPS ☐ Customer ☐ Other Custody Seals intact: ∠Yes ☐No
Therometer Therm!	Fisher IR 5 Fisher IR 6 Fisher IR 7	Type of Ice	v	Vet	Blue None	Samples on ice: [see COC]
Cooler Temperature: [see	COC] Tem	p should be	above f	reezir	ng to 6°C	Date and Initials of person examining contents:
Temp must be measured from Te	emperature blank when p	present		Com	ments:	
Temperature Blank Present	7	□Yes □No	LIN/A	1		
Chain of Custody Present:		√EYes □No	□n/a	2		
Chain of Custody Complete:		Yes □No	□n/a	3		
Chain of Custody Relinquishe	ed:		□N/A	4		
Sampler Name & Signature o	in COC:	Yes DNo	□n/a	5	· .	
Samples Arrived within Hold	Time:	√Yes □No	□N/A	6		
Sufficient Volume:		√es □No	□ N/A	7		<u> </u>
Correct Containers Used:		√Yes □No	□N/A	8		
Filtered vol. Rec. for Diss. tes	its	□Yes □No		9		
Sample Labels match COC:		√Yes □No	□N/A	10		
All containers received within precautionary and/or expiration		No	ì □n/a	11		
All containers needing chemic been checked (except VOA, o		Nc	□N/A	12		
All containers preservation of compliance with EPA recomn		√es □No	□ N/A	13	If No, was p If added red	oreserative added?
Headspace in VOA Vials (>6	mm):	□Yes - No	_ □N/A	14		
Trip Blank Present:		Yes DNo)	15		
Client Notification/ Resolut	ion:	, ,,,e		·····		
Person Contacted:	JOTE.					Date/Time:
Comments/ Resolution:	,					
	<u> </u>					





January 18, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 04, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Juan Redondo juan.redondo@pacelabs.com Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC):

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC): T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS



SAMPLE SUMMARY

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048198001	TB-010317	Water	01/03/17 00:00	01/04/17 15:08
2048198002	EB-010317	Water	01/03/17 08:48	01/04/17 15:08
2048198003	MW-B9	Water	01/03/17 09:35	01/04/17 15:08
2048198004	MW-EB103	Water	01/03/17 10:27	01/04/17 15:08
2048198005	MW-EB104	Water	01/03/17 11:26	01/04/17 15:08
2048198006	MW-EB105	Water	01/03/17 13:45	01/04/17 15:08
2048198007	DUP004	Water	01/03/17 00:00	01/04/17 15:08
2048198008	MW-EB106	Water	01/03/17 14:28	01/04/17 15:08
2048198009	MW-EB107	Water	01/03/17 15:11	01/04/17 15:08
2048198010	MW-EB108	Water	01/03/17 16:01	01/04/17 15:08
2048198011	FB-010317	Water	01/03/17 16:10	01/04/17 15:08
2048198012	TB-010417	Water	01/04/17 00:00	01/04/17 15:08
2048198013	EB-010417	Water	01/04/17 08:58	01/04/17 15:08
2048198014	MW-DP1	Water	01/04/17 09:36	01/04/17 15:08
2048198015	MW-MP2	Water	01/04/17 10:25	01/04/17 15:08
2048198016	MW-MP3	Water	01/04/17 11:46	01/04/17 15:08
2048198017	MW-MP8	Water	01/04/17 13:33	01/04/17 15:08
2048198018	TB-010417-2	Water	01/04/17 00:00	01/04/17 15:08
2048198019	MW-NDP	Water	01/04/17 14:22	01/04/17 15:08
2048198020	FB-010417	Water	01/04/17 14:30	01/04/17 15:08



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048198001	TB-010317	EPA 8015/8021	МНМ	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198002	EB-010317	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	мнв1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198003	MW-B9	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198004	MW-EB103	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198005	MW-EB104	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198006	MW-EB105	EPA 8015B Modified	SLF	4	PASI-N
	•	EPA 8015/8021	M∺M	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SiM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048198007	DUP004	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048198008	MW-EB106	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJŔ	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048198009	MW-EB107	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048198010	MW-EB108	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048198011	FB-010317	EPA 8015/8021	мнм		PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198012	TB-010417	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198013	EB-010417	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
	EPA 8270 by SIM	GEJ	19	PASI-N	
		EPA 5030B/8260	RMP	45	PASI-N
2048198014	MW-DP1	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198015	MW-MP2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198016	MW-MP3	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	мнв1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198017	MW-MP8	EPA 8015B Modified	SLF	4	PASI-N

REPORT OF LABORATORY ANALYSIS



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198018	TB-010417-2	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198019	MW-NDP	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198020	FB-010417	EPA 8015/8021	МНМ	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N





PROJECT NARRATIVE

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR

Date:

January 18, 2017

General Information:

15 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:





PROJECT NARRATIVE

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client:

BBL Caribe / Arcadis PR

Date:

January 18, 2017

General Information:

20 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:





PROJECT NARRATIVE

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Method:

EPA 6020

Description: 6020 MET ICPMS

Client:

BBL Caribe / Arcadis PR

Date:

January 18, 2017

General Information:

15 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Method:

EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client:

BBL Caribe / Arcadis PR

Date:

January 18, 2017

General Information:

15 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Method: EPA 7470

Description: 7470 Mercury **Client**: BBL Caribe / A

Date:

BBL Caribe / Arcadis PR January 18, 2017

General Information:

15 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71616

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- · MS (Lab ID: 299682)
 - Mercury
- MSD (Lab ID: 299683)
 - Mercury

Additional Comments:



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Method:

EPA 7470

Description: 7470 Mercury, Dissolved (LF) BBL Caribe / Arcadis PR

Client: Date:

January 18, 2017

General Information:

15 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71675

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299990)
 - · Mercury, Dissolved
- MSD (Lab ID: 299991)
 - · Mercury, Dissolved

Additional Comments:





Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No .:

2048198

Method: EPA 8

EPA 8270 by SIM

Client:

Description: 8270 MSSV PAH by SIM SEP

Chent

BBL Caribe / Arcadis PR

Date:

January 18, 2017

General Information:

15 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71484

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

R1: RPD value was outside control limits.

- MSD (Lab ID: 299017)
 - 2-Methylnaphthalene
 - Acenaphthene
 - Acenaphthylene
 - Anthracene
 - Benzo(a)anthracene
 - · Benzo(a)pyrene
 - · Benzo(b)fluoranthene
 - Benzo(k)fluoranthene
 - Chrysene

REPORT OF LABORATORY ANALYSIS

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Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Method:

EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client:

BBL Caribe / Arcadis PR

Date:

January 18, 2017

QC Batch: 71484

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

R1: RPD value was outside control limits.

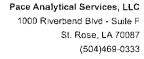
• Fluoranthene

- Fluorene
- Naphthalene
- Phenanthrene
- Pyrene

QC Batch: 71561

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:





Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No .:

2048198

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR

Date:

January 18, 2017

General Information:

20 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71490

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 299029)
 - · Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71490

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab iD: 299030)
 - · Carbon disulfide
- MSD (Lab ID: 299031)
 - Carbon disulfide

Additional Comments:



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR

Date:

January 18, 2017

Analyte Comments:

QC Batch: 71490

C9: Common Laboratory Contaminant.

- DUP004 (Lab ID: 2048198007)
 - Acetone
- EB-010317 (Lab ID: 2048198002)
 - Acetone
- EB-010417 (Lab ID: 2048198013)
 - Acetone
- FB-010317 (Lab ID: 2048198011)
 - Acetone
- FB-010417 (Lab ID: 2048198020)
 - Acetone
- MW-B9 (Lab ID: 2048198003)
 - Acetone
- MW-DP1 (Lab ID: 2048198014)
 - Acetone
- MW-EB103 (Lab ID: 2048198004)
 - Acetone
- MW-EB104 (Lab ID: 2048198005)
 - Acetone
- MW-EB105 (Lab ID: 2048198006)
 - Acetone
- MW-EB106 (Lab ID: 2048198008)
 - Acetone
- MW-EB108 (Lab ID: 2048198010)
 - Acetone
- MW-MP2 (Lab ID: 2048198015)
 - Acetone
- MW-MP3 (Lab ID: 2048198016)
 - Acetone
- · MW-MP8 (Lab ID: 2048198017)
 - Acetone
- · MW-NDP (Lab ID: 2048198019)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: TB-010317 Lab ID: 2048198001 Collected: 01/03/17 00:00 Receiv Parameters Results Units Report Limit DE Prepared Qual 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/06/17 20:48 Surrogates 4-Bromofluorobenzene (S) 89 %. 44-148 01/06/17 20:48 460-00-4 1 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 171 ug/L 4.0 01/06/17 11:42 67-64-1 Benzene ND ug/L 0.50 01/06/17 11:42 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/06/17 11:42 75-27-4 ND Bromoform ug/L 0.50 1 01/06/17 11:42 75-25-2 Bromomethane ND ug/L 0.5001/06/17 11:42 74-83-9 2-Butanone (MEK) ND ug/L 2.0 1 01/06/17 11:42 78-93-3 Carbon disulfide ND 1.0 01/06/17 11:42 75-15-0 ug/L 1 L3 Carbon tetrachloride ND 0.50 01/06/17 11:42 56-23-5 ug/L 1 01/06/17 11:42 108-90-7 Chlorobenzene NID ug/L 0.50 1 Chloroethane ND ug/L 0.50 1 01/06/17 11:42 75-00-3 Chloroform ND ug/L 0.50 1 01/06/17 11:42 67-66-3 Chloromethane 0.50 ND 01/06/17 11:42 74-87-3 ug/L 1 1,2-Dibromo-3-chloropropane ND 0.20 01/06/17 11:42 96-12-8 1 ug/L Dibromochloromethane ND 0.50 01/06/17 11:42 124-48-1 ug/L 1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 01/06/17 11:42 106-93-4 Dichlorodifluoromethane NĎ ug/L 1.0 01/06/17 11:42 75-71-8 1 1,1-Dichloroethane NΩ ug/L 0.50 1 01/06/17 11:42 75-34-3 1,2-Dichloroethane ND ug/L 0.50 1 01/06/17 11:42 107-06-2 1,1-Dichloroethene ND ug/L 0.50 1 01/06/17 11:42 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/06/17 11:42 156-59-2 trans-1,2-Dichloroethene ND ug/L 0.50 1 01/06/17 11:42 156-60-5 1,2-Dichloropropane ND uq/L 0.50 1 01/06/17 11:42 78-87-5 cis-1,3-Dichloropropene ND 0.50 ug/L 1 01/06/17 11:42 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 1 01/06/17 11:42 10061-02-6 Ethylbenzene ND ug/L 0.50 1 01/06/17 11:42 100-41-4 2-Hexanone ND ug/L 1.0 01/06/17 11:42 591-78-6 1 Isopropylbenzene (Cumene) ND ug/L 1.0 1 01/06/17 11:42 98-82-8 Methyl acetate ND ug/L 2.0 1 01/06/17 11:42 79-20-9 Methylene Chloride ND ug/L 0.50 1 01/06/17 11:42 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 01/06/17 11:42 108-10-1 Methyl-tert-butyl ether ND ug/L 0.50 1 01/06/17 11:42 1634-04-4 Styrene ND ug/L 1.0 1 01/06/17 11:42 100-42-5 1,1,2,2-Tetrachloroethane ND 0.50 ug/L 01/06/17 11:42 79-34-5 Tetrachloroethene ND ug/L 0.50 01/06/17 11:42 127-18-4 Toluene NΩ ug/L 0.50 01/06/17 11:42 108-88-3 1.1.1-Trichloroethane ND 0.50 ug/L 1 01/06/17 11:42 71-55-6 1.1.2-Trichloroethane ND ug/L 0.50 1 01/06/17 11:42 79-00-5 Trichtoroethene ND ug/L 0.50 1 01/06/17 11:42 79-01-6 Trichlorofluoromethane ND ug/L 0.50 1 01/06/17 11:42 75-69-4 01/06/17 11:42 75-01-4 Vinyl chloride ND ug/L 0.50 1 m&p-Xylene ND ug/L 2.0 01/06/17 11:42 179601-23-1 1 o-Xylene ND ua/L 01/06/17 11:42 95-47-6 1.0 1



ANALYTICAL RESULTS

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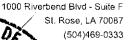
PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: TB-010317 Lab ID: 2048198001 Collected: 01/03/17 00:00 Receive Parameters Results Units Report Limit DF Prepared Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Surrogates Dibromofluoromethane (S) 106 %. 01/06/17 11:42 1868-53-7 72-126 1 4-Bromofluorobenzene (S) 96 %. 68-124 1 01/06/17 11:42 460-00-4 Toluene-d8 (S) 99 %. 79-119 1 01/06/17 11:42 2037-26-5

Complete ED 040247	1 - 1 10 004	2400000	0.11.1.1.04/00/4	~ ^ ^ 10	5	10.1117.15.00		
Sample: EB-010317	Lab ID: 204	8198002	Collected: 01/03/17	7 08:48	Received: 01	/04/17 15:08	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepar	ation M	lethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 17:27		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 17:27		
n-Pentacosane (S)	49	%.	16-137	1	01/06/17 07:40	01/11/17 17:27	629-99-2	
o-Terphenyl (S)	50	%.	10-121	1	01/06/17 07:40	01/11/17 17:27	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/06/17 18:08	3	
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/06/17 18:08	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Meth	od: EP	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:52	7440-38-2	
Chromium	ND	mg/L	0.0010	1		01/13/17 21:52		
Lead	ND	mg/L	0.0010	1		01/13/17 21:52		
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:52	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Meth	od: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:22	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:22	2 7440-47-3	
Lead, Dissolved	NÐ	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:22	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:22	2 7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	od: EP	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:17	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	od: EP	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:00	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	nod: EPA 82	270 by SIM Preparation	on Met	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1		01/09/17 20:40		
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	50-32-8	





ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: EB-010317	Lab ID: 204	8198002	Collected: 01/03/	17 08:48	Received	14:08	at Vater	
Parameters	Results	Units	Report Limit	DF	Received &	MCO LICEN	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Prepara	tion Meth	nod: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	205-99-2	
Benzo(g,h,i)perylene	ФИ	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	191-24-2	
Benzo(k)fluoranthene	ПЛ	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	85-01-8	
Pyrene	ND	ug/L	0.10	1		01/09/17 20:40		
Surrogates		Ü						
2-Fluorobiphenyl (S)	84	%.	25-150	1	01/06/17 09:20	01/09/17 20:40	321-60-8	
Terphenyl-d14 (S)	84	%.	25-150	1	01/06/17 09:20	01/09/17 20:40	1718-51-0	
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	12.1	ug/L	4.0	1		01/06/17 11:59	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 11:59	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 11:59	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 11:59		
Bromomethane	ND	ug/L	0.50	1		01/06/17 11:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 11:59		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 11:59		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 11:59		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 11:59		
Chloroethane	ND	ug/L	0.50	1		01/06/17 11:59		
Chloroform	ND	ug/L	0.50	1		01/06/17 11:59		
Chloromethane	ND	ug/L	0.50	1		01/06/17 11:59		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 11:59		
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 11:59		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 11:59		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 11:59		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:59		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:59		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:59		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 11:59		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:59		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 11:59		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:59		
trans-1,3-Dichloropropene	ND	ug/L ug/L	0.50	1		01/06/17 11:59		
Ethylbenzene	ND	ug/L ug/L	0.50	1		01/06/17 11:59		
2-Hexanone	ND	ug/L ug/L	1.0	1		01/06/17 11:59		
Isopropylbenzene (Cumene)	ND	ug/L ug/L	1.0	1		01/06/17 11:59		
Methyl acetate	ND	ug/L ug/L	2.0	1		01/06/17 11:59		
Methylene Chloride	ND		0.50	1		01/06/17 11:59		
4-Methyl-2-pentanone (MIBK)	ND ND	ug/L						
ividinyi-z-penianone (Mibr.)	טאו	ug/L	1.0	1		01/06/17 11:59	100-10-1	



ANALYTICAL RESULTS

Project:

Vanadium, Dissolved

Date: 01/18/2017 12:36 PM

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198					<u> [5]</u>	4411/18	(Nel	
Sample: EB-010317	Lab ID: 204	8198002	Collected: 01/03/	17 08:48	Received 01	/04/17 1)(08/4)	Water Verter	
Parameters	Results	Units	Report Limit	DF	Prepared	nco litte	EAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260		·	CO E.C.		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 11:59	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 11:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 11:59	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 11:59	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 11:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:59	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 11:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 11:59	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 11:59	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 11:59		
o-Xylene	ND	ug/L	1.0	1		01/06/17 11:59		
Surrogates		3						
Dibromofluoromethane (S)	107	%.	72-126	1		01/06/17 11:59	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 11:59	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		01/06/17 11:59	2037-26-5	
Sample: MW-B9	Lab ID: 204	8198003	Collected: 01/03/	17 09:35	Received: 01	i/04/17 15:08 N	//atrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	aration M	1ethod: EPA 3535	<u> </u>		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 17:55		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1		01/11/17 17:55		
Surrogates	110	111972	0.00	•	01/00/11/01:40	01/11/11 17.00		
n-Pentacosane (S)	49	%.	16-137	1	01/06/17 07:40	01/11/17 17:55	629-99-2	
o-Terphenyl (S)	59	%.	10-121	1		01/11/17 17:55		
8021 GCV BTEX, MTBE, GRO	Analytical Met			·			*	
Gasoline Range Organics	ND	ug/L	50.0	1		01/06/17 18:34		
Surrogates 4-Bromofluorobenzene (S)	93	%.	44-148	1		01/06/17 18:34	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EP	A 3010			
Arsenic	0.0032	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:56	7440-38-2	
Chromium	ND	mg/L	0.0010	1		01/13/17 21:56		
Lead	ND .	mg/L	0.0010	1		01/13/17 21:56		
Vanadium	ND	mg/L	0.0050	1		01/13/17 21:56		
6020 MET ICPMS, Dissolved (LF)		J	020 Preparation Met					
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11· <i>AA</i>	01/13/17 23:26	7440_38_2	
Chromium, Dissolved	ND	ug/L ug/L	1.0	1		01/13/17 23:26		
Lead, Dissolved	ND	ug/L	1.0	1		01/13/17 23:26		
Manual and Division In	ND	ug/∟	1.0		01/10/17 11.44	01/10/17 23.20	1439-32-1	

REPORT OF LABORATORY ANALYSIS

5.0

01/10/17 11:44 01/13/17 23:26 7440-62-2

ND

ug/L



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

Date: 01/18/2017 12:36 PM

2048198

Sample: MW-B9

Lab ID: 2048198003

Collected: 01/03/17 09:35

Sample: MW-B9	Lab ID: 2048	8198003	Collected: 01/03/1	7 09:35	5 Received	04/17/18:08	Water	
Parameters	Results	Units	Report Limit	DF	Prepared	(CANALLE M	CAS No.	Qual
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EP				
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:19	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Meth	nod: EF	PA 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:10	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparati	ion Met	thod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	91-57-6	
Naphthalene	ND	ug/L	0.10	1		01/09/17 21:00		
Phenanthrene	ND	ug/L	0,10	1		01/09/17 21:00		
Pyrene	ND	ug/L	0.10	1		01/09/17 21:00		
Surrogates		-3-			* *			
2-Fluorobiphenyl (S)	94	%.	25-150	1	01/06/17 09:20	01/09/17 21:00	321-60-8	
Terphenyl-d14 (S)	88	%.	25-150	1	01/06/17 09:20	01/09/17 21:00	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
Acetone	5.3	ug/L	4.0	1		01/06/17 12:17	67-64-1	C9
Benzene	ИD	ug/L	0.50	1		01/06/17 12:17	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 12:17	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 12:17	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 12:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 12:17	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 12:17	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 12:17	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 12:17		
Chloroethane	ND	ug/L	0.50	1		01/06/17 12:17		
Chloroform	ND	ug/L	0.50	1		01/06/17 12:17		
Chloromethane	ND	ug/L	0.50	1		01/06/17 12:17		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 12:17		
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 12:17		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 12:17		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 12:17		
1.1-Dichloroethane	ND	ug/L ug/L	0.50	1		01/06/17 12:17		
1,2-Dichloroethane	ND	ug/L ug/L	0.50	1		01/06/17 12:17		
,=		~9.=	0.00			2.022.11 (m.11		

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

Toluene-d8 (S)

Date: 01/18/2017 12:36 PM

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-B9 Lab ID: 2048198003 Collected: 01/03/17 09:35 Water Prepa Parameters Results Units CAS No. Report Limit DF Qual Analytical Method: EPA 5030B/8260 8260 MSV Low Level 1,1-Dichloroethene ND ug/L 0.50 1 01/06/17 12:17 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 01/06/17 12:17 156-59-2 1 trans-1,2-Dichloroethene ND 0.50 01/06/17 12:17 156-60-5 ug/L 1 1,2-Dichloropropane ND 0.50 01/06/17 12:17 78-87-5 ug/L 1 cis-1,3-Dichloropropene ND ug/L 0.50 01/06/17 12:17 10061-01-5 1 trans-1,3-Dichloropropene 01/06/17 12:17 10061-02-6 ND ug/L 0.50 1 Ethylbenzene ND ug/L 0.50 1 01/06/17 12:17 100-41-4 2-Hexanone 01/06/17 12:17 591-78-6 ND ug/L 1.0 1 Isopropylbenzene (Cumene) ND 01/06/17 12:17 98-82-8 ug/L 1.0 1 Methyl acetate ND 01/06/17 12:17 79-20-9 ug/L 2.0 1 Methylene Chloride ND 0.50 01/06/17 12:17 75-09-2 ug/L 1 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 01/06/17 12:17 108-10-1 Methyl-tert-butyl ether ND 0.50 01/06/17 12:17 1634-04-4 ug/L Styrene ND ug/L 1.0 01/06/17 12:17 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 01/06/17 12:17 79-34-5 Tetrachloroethene ND ug/L 0.50 1 01/06/17 12:17 127-18-4 Toluene ND ug/L 0.50 1 01/06/17 12:17 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 1 01/06/17 12:17 71-55-6 1,1,2-Trichloroethane ND ug/L 0.50 1 01/06/17 12:17 79-00-5 Trichloroethene ND ug/L 0.50 1 01/06/17 12:17 79-01-6 Trichlorofluoromethane ND 0.50 01/06/17 12:17 75-69-4 ug/L 1 Vinyl chloride ND ug/L 0.50 1 01/06/17 12:17 75-01-4 m&p-Xylene ND 2.0 1 01/06/17 12:17 179601-23-1 ug/L o-Xylene NΩ 1.0 1 01/06/17 12:17 95-47-6 ug/L Surrogates Dibromofluoromethane (S) 105 %. 72-126 01/06/17 12:17 1868-53-7 4-Bromofluorobenzene (S) 96 %. 68-124 1 01/06/17 12:17 460-00-4

Sample: MW-EB103	Lab ID: 204	8198004	Collected: 01/03/1	7 10:2	7 Received: 01	/04/17 15:08 N	/latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meti	nod: EPA 80	015B Modified Prepa	ration	Method: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 18:23		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 18:23		
n-Pentacosane (S)	59	%.	16-137	1	01/06/17 07:40	01/11/17 18:23	629-99-2	
o-Terphenyl (S)	49	%.	10-121	1	01/06/17 07:40	01/11/17 18:23	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	71.2	ug/L	50.0	1		01/06/17 19:01		
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/06/17 19:01	460-00-4	

79-119

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100

%.

REPORT OF LABORATORY ANALYSIS

01/06/17 12:17 2037-26-5

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB103	Lab ID: 204	8198004	Collected: 01/03/1	7.40.05	170	-^\ `\\\\\	\- <i>!</i>	
			001100100: 0170071	7 10:27	Received 0	04/1 ⁴ /15 %	r trix: Water	
Parameters	Results	Units	Report Limit	DF	Re (a) ON	Licial	CAS No.	Qual
6020 MET ICPMS	Analytical Met	hod: EPA 60	020 Preparation Met	nod: EP				
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:08	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	020 Preparation Met	nod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:30	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/13/17 23:30		
Lead, Dissolved	ND	ug/L	1.0	1		01/13/17 23:30		
Vanadium, Dissolved	ND	ug/L	5.0	1		01/13/17 23:30		
7470 Mercury	Analytical Met	hod: EPA 74	170 Preparation Met	nod: EP	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:26	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 74	170 Preparation Met	hod: EP	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:19	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparat	ion Met	hod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	208-96-8	
Anthracene	ND	ug/L	0.10	1		01/09/17 21:20		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1		01/09/17 21:20		
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/09/17 21:20		
Chrysene	ND	ug/L	0.10	1		01/09/17 21:20		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/09/17 21:20		
Fluoranthene	ND	ug/L	0.10	1		01/09/17 21:20		
Fluorene	ND	ug/L	0.10	1		01/09/17 21:20		
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/09/17 21:20		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/09/17 21:20		
Naphthalene	ND	ug/L	0.10	1		01/09/17 21:20		
Phenanthrene	ND	ug/L	0.10	1		01/09/17 21:20		
Pyrene	ND	ug/L	0.10	1		01/09/17 21:20		
Surrogates	NU	ugr	0.10	1	01/06/17 09.20	01/09/17 21.20	129-00-0	
2-Fluorobiphenyl (S)	86	%.	25-150	1	01/06/17 09:20	01/09/17 21:20	321_60_8	
Terphenyl-d14 (S)	80	%.	25-150	1		01/09/17 21:20		
8260 MSV Low Level	Analytical Met	hod: EPA 50						
Acetone	15.6			4	*	01/06/17 10:24	67 64 4	Co
Benzene		ug/L	4.0	1		01/06/17 12:34 01/06/17 12:34		C9
	ND	ug/L	0.50	1				
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 12:34		
Bromoform	ND	ug/L	0.50	1		01/06/17 12:34		
Bromomethane	ND	ug/L	0.50	1		01/06/17 12:34		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 12:34	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Toluene-d8 (S)

Date: 01/18/2017 12:36 PM

Sample: MW-EB103 Lab ID: 2048198004 Collected: 01/03/17 10:27 x: Water Parameters Results Units Report Limit DF CAS No. Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Carbon disulfide ND ug/L 1.0 01/06/17 12:34 75-15-0 L3 Carbon tetrachloride ND 0.50 ug/L 1 01/06/17 12:34 56-23-5 Chlorobenzene ND ug/L 01/06/17 12:34 108-90-7 0.50 1 Chloroethane ND ug/L 0.50 01/06/17 12:34 75-00-3 1 Chloroform ND ug/L 0.50 1 01/06/17 12:34 67-66-3 Chloromethane ND ug/L 0.50 01/06/17 12:34 74-87-3 1 1,2-Dibromo-3-chloropropane ND ug/L 0.20 01/06/17 12:34 96-12-8 Dibromochloromethane ND ug/L 0.50 01/06/17 12:34 124-48-1 1 1.2-Dibromoethane (EDB) ND ug/L 1.0 1 01/06/17 12:34 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 01/06/17 12:34 75-71-8 1.1-Dichloroethane ND ug/L 0.50 1 01/06/17 12:34 75-34-3 1,2-Dichloroethane ND ug/L 0.50 1 01/06/17 12:34 107-06-2 1,1-Dichloroethene ND 0.50 ug/L 1 01/06/17 12:34 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/06/17 12:34 156-59-2 trans-1,2-Dichloroethene ND ug/L 0.50 1 01/06/17 12:34 156-60-5 1,2-Dichloropropane ND ug/L 0.50 1 01/06/17 12:34 78-87-5 cis-1,3-Dichloropropene ND ug/L 0.50 1 01/06/17 12:34 10061-01-5 trans-1,3-Dichloropropene ND 0.50 ug/L 01/06/17 12:34 10061-02-6 1 Ethylbenzene ND 0.50 ug/L 01/06/17 12:34 100-41-4 1 2-Hexanone ND ug/L 1.0 01/06/17 12:34 591-78-6 1 Isopropylbenzene (Cumene) ND 01/06/17 12:34 98-82-8 ug/L 1.0 1 Methyl acetate ND 2.0 ug/L 01/06/17 12:34 79-20-9 1 Methylene Chloride ug/L ND 0.50 01/06/17 12:34 75-09-2 1 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 01/06/17 12:34 108-10-1 1 Methyl-tert-butyl ether 45.3 ua/L 0.50 1 01/06/17 12:34 1634-04-4 Styrene ND uq/L 1.0 1 01/06/17 12:34 100-42-5 1,1,2,2-Tetrachloroethane ND uq/L 0.50 1 01/06/17 12:34 79-34-5 Tetrachloroethene ND ug/L 0.50 1 01/06/17 12:34 127-18-4 Taluene ND 0.50 ug/L 1 01/06/17 12:34 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 1 01/06/17 12:34 71-55-6 1,1,2-Trichloroethane ND 0.50 ug/L 1 01/06/17 12:34 79-00-5 Trichloroethene ND ug/L 0.50 01/06/17 12:34 1 79-01-6 Trichlorofluoromethane ND ug/L 0.50 01/06/17 12:34 1 75-69-4 Vinyl chloride ND ug/L 0.50 1 01/06/17 12:34 75-01-4 m&p-Xylene ND ug/L 2.0 1 01/06/17 12:34 179601-23-1 o-Xylene ND ug/L 1.0 1 01/06/17 12:34 95-47-6 Surrogates Dibromofluoromethane (S) 109 %. 72-126 1 01/06/17 12:34 1868-53-7 4-Bromofluorobenzene (S) 97 68-124 %. 1 01/06/17 12:34 460-00-4

REPORT OF LABORATORY ANALYSIS

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01/06/17 12:34 2037-26-5

(504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB104 Collected: 01/03/17 11:26 Lab ID: 2048198005 Parameters Results Units Report Limit DE AS No. Qual 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND 0.25 mg/L 1 Oil Range Organics (>C28-C40) ND 0.50 01/06/17 07:40 | 01/11/17 18:51 mg/L 1 Surrogates n-Pentacosane (S) 47 %. 16-137 1 o-Terphenyl (S) 55 %. 10-121 1 01/06/17 07:40 01/11/17 18:51 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics 88.4 ug/L 50.0 1 01/06/17 19:28 Surrogates 4-Bromofluorobenzene (S) 92 %. 44-148 01/06/17 19:28 460-00-4 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 Arsenic NΠ mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:11 7440-38-2 Chromium 0.0017 mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:11 7440-47-3 Lead 0.0010 ND mg/L 1 01/09/17 15:32 01/13/17 22:11 7439-92-1 Vanadium 0.0050 ND mg/L 1 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND 1.0 1 ug/L Chromium, Dissolved NΠ ug/L 1.0 1 01/10/17 11:44 01/13/17 23:42 7440-47-3 Lead, Dissolved ND 01/10/17 11:44 01/13/17 23:42 7439-92-1 ug/L 1.0 1 Vanadium, Dissolved 01/10/17 11:44 01/13/17 23:42 7440-62-2 ND ua/L 5.0 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury ND 0.20 ug/L 01/09/17 15:19 01/09/17 20:28 7439-97-6 Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury, Dissolved (LF) Mercury, Dissolved ND ug/L 0.20 01/10/17 12:30 01/10/17 17:24 7439-97-6 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene ND ug/L 0.10 01/06/17 09:20 01/09/17 21:39 83-32-9 Acenaphthylene ND 0.10 ug/L 1 01/06/17 09:20 01/09/17 21:39 208-96-8 Anthracene ND 0.10 ug/L 1 01/06/17 09:20 01/09/17 21:39 120-12-7 Benzo(a)anthracene ND 0.10 ug/L 1 01/06/17 09:20 01/09/17 21:39 56-55-3 Benzo(a)pyrene ND 0.10 ug/L 1 01/06/17 09:20 01/09/17 21:39 50-32-8 Benzo(b)fluoranthene ND ug/L 0.10 1 Benzo(g,h,i)perylene ND 0.10 ug/L 1 Benzo(k)fluoranthene ND 0.10 1 ug/L Chrysene ND 0.10 1 ug/L Dibenz(a,h)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/09/17 21:39 53-70-3 Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/09/17 21:39 206-44-0 Elugrene ND ug/L 0.101 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/09/17 21:39 193-39-5 2-Methylnaphthalene ND 0.10 01/06/17 09:20 01/09/17 21:39 91-57-6 ug/L 1 Naphthalene ND 0.10 01/06/17 09:20 01/09/17 21:39 91-20-3 ug/L 1 Phenanthrene ND ug/L 0.10



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB104 Lab ID: 2048198005 Collected: 01/03/17 11:26 Received:

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Parameters	Results	Units	Report Limit	DF	Prepared	Analyzeu	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 827	0 by SIM Preparati	on Met	hod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	25-150	1		01/09/17 21:39		
Terphenyl-d14 (S)	79	%.	25-150	1	01/06/17 09:20	01/09/17 21:39	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 503	0B/8260					
Acetone	6.2	ug/L	4.0	1		01/06/17 12:52	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 12:52	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 12:52	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 12:52	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 12:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 12:52	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 12:52	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 12:52	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 12:52	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 12:52	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 12:52	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 12:52	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 12:52	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 12:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 12:52	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 12:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:52	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 12:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 12:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:52	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 12:52	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 12:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 12:52	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 12:52	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 12:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	. 1		01/06/17 12:52	108-10-1	
Methyl-tert-butyl ether	61.2	ug/L	0.50	1		01/06/17 12:52	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 12:52	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 12:52		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 12:52		
Toluene	ND	ug/L	0.50	1		01/06/17 12:52		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:52		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:52		
Trichloroethene	ND	ug/L	0,50	1		01/06/17 12:52		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 12:52		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 12:52		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 12:52		1
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ANALYTICAL RESULTS

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PUMA TERMINAL MW-SAMPLING

Date: 01/18/2017 12:36 PM

2	AL MW-SAMPLING					Negro	有人為	
Pace Project No.: 2048198						*PTY	KV XX	
Sample: MW-EB104	Lab ID: 2048	198005	Collected: 01/03/1	7 11:26		A4/17 19/08 \ V		
Parameters	Results	Units	Report Limit	DF	Prepared	MICO LIC	No.	Qual
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
o-Xylene	ND	ug/L	1.0	1		01/06/17 12:52	95-47-6	
Surrogates Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 12:52	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/06/17 12:52	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		01/06/17 12:52	2037-26-5	
Sample: MW-EB105	Lab ID: 2048	3198006	Collected: 01/03/1	7 13:45	Received: 01	/04/17 1 5:08 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	od: EPA 80	015B Modified Prepa	ration M	 lethod: EPA 3535	5		-
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 19:19		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 19:19		
n-Pentacosane (S)	48	%.	16-137	1		01/11/17 19:19		
o-Terphenyl (S)	. 64	%.	10-121	1	01/06/17 07:40	01/11/17 19:19	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/06/17 19:54		
4-Bromofluorobenzene (S)	91	%.	44-148	1		01/06/17 19:54	460-00-4	
6020 MET ICPMS	Analytical Meth	od: EPA 6	020 Preparation Met	hod: EP	A 3010			
Arsenic	0.0052	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:36	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:36	7440-47-3	
Lead	ND	mg/L	0.0010	1		01/13/17 21:36		
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:36	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	od: EPA 6	020 Preparation Met	hod: EP	A 3005A			
Arsenic, Dissolved	1.6	ug/L	1.0	1		01/13/17 20:21		
Chromium, Dissolved	ND	ug/L	1.0	1		01/13/17 20:21		
Lead, Dissolved	ND	ug/L	1.0	1		01/13/17 20:21		
Vanadium, Dissolved 7470 Mercury	ND Applytical Math	ug/L	5.0 470 Preparation Met	1		01/13/17 20:21	7440-62-2	
						04/00/47 20:44	7490 07 6	N44
Mercury	ND	ug/L	0.20	1		01/09/17 20:11	7439-97-6	M1
7470 Mercury, Dissolved (LF)	•		470 Preparation Met			044047406	7400 07 0	144
Mercury, Dissolved	ND	ug/L	0.20			01/10/17 16:55	7439-97-6	M1
8270 MSSV PAH by SIM SEP	•		270 by SIM Preparat					
Acenaphthene	0.27	ug/L	0.10	1		01/09/17 21:59		R1
Activities	ND	ug/L	0.10	1		01/09/17 21:59		R1
Anthracene	0.11 ND	ug/L	0.10 0.10	1 1		01/09/17 21:59 01/09/17 21:59		R1 R1
Benzo(a)anthracene	MD	ug/L	0,10	1	0 1/00/17 09.20	0 1/09/17 Z 1.39	30-33-3	IN I

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ANALYTICAL RESULTS

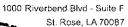
Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Pace Project No.: 2048198					Time!	#5118N	ルコ	
Sample: MW-EB105	Lab ID: 204	8198006	Collected: 01/03/	17 13:45	Received 01	/04/1 /7/1 5:08 /	a Vater	
Parameters	Results	Units	Report Limit	DF	Received 11	COATERED	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Met	hod; EPA 8	270 by SIM Preparat	ion Met	hod: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	50-32-8	R1
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	205-99-2	R1
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	207-08-9	R1
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	218-01-9	R1
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	206-44-0	R1
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	86-73-7	R1
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1		01/09/17 21:59		R1
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	91-20-3	R1
Phenanthrene	0.26	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	85-01-8	R1
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	129-00-0	R1
Surrogates		J						
2-Fluorobiphenyl (S)	97	%.	25-150	1	01/06/17 09:20	01/09/17 21:59	321-60-8	
Terphenyl-d14 (S)	99	%.	25-150	1	01/06/17 09:20	01/09/17 21:59	1718-51-0	
8260 MSV Low Level	Analytical Met	thod: EPA 5	030B/8260					
Acetone	39.4	ug/L	4.0	1		01/06/17 11:24	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 11:24		
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 11:24		
Bromoform	ND	ug/L	0.50	1		01/06/17 11:24		
Bromomethane	ND	ug/L	0.50	1		01/06/17 11:24		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 11:24		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 11:24		L1,M0
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 11:24		21,1110
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 11:24		
Chloroethane	ND	ug/L	0.50	1		01/06/17 11:24		
Chloroform	ND	ug/L	0.50	1		01/06/17 11:24		
Chloromethane	ND	ug/L	0.50	1		01/06/17 11:24		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 11:24		
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 11:24		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 11:24		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 11:24		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:24		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:24		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:24		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 11:24		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:24		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 11:24		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:24		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:24		
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 11:24		
2-Hexanone	. ND	ug/L	1.0	1		01/06/17 11:24		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 11:24		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 11:24		
Methylene Chloride	ND	ug/L ug/L	0.50	1		01/06/17 11:24		
monty is no other rue	NU	ugr	0.50	,		0.1700/17.11.24	10-03-2	



(504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB105	Lab ID: 204	8198006	Collected: 01/03/1	7 13:45	Received: 010/4/17 15/08 1/14/23 Ser
Parameters	Results	Units	Report Limit	DF	Prepared Crzenii AS No. Qua
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 11:24 108-10-1
Methyl-terf-butyl ether	8.2	ug/L	0.50	1	01/06/17 11:24 1634-04-4
Styrene	ND	ug/L	1.0	1	01/06/17 11:24 100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 11:24 79-34-5
Tetrachioroethene	ND	ug/L	0.50	1	01/06/17 11:24 127-18-4
Toluene	ND	ug/L	0.50	1	01/06/17 11:24 108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 11:24 71-55-6
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 11:24 79-00-5
Trichloroethene	ND	ug/L	0.50	1	01/06/17 11:24 79-01-6
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 11:24 75-69-4
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 11:24 75-01-4
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 11:24 179601-23-1
o-Xylene	ND	ug/L	1.0	1	01/06/17 11:24 95-47-6
Surrogates					
Dibromofluoromethane (S)	106	%.	72-126	1	01/06/17 11:24 1868-53-7
4-Bromofluorobenzene (S)	97	%.	68-124	1	01/06/17 11:24 460-00-4
Toluene-d8 (S)	100	%.	79-119	1	01/06/17 11:24 2037-26-5

Sample: DUP004	Lab ID: 204	8198007	Collected: 01/03/1	7 00:0	0 Received: 01	/04/17 15:08 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration I	Method: EPA 3535	5		
Diesel Range Organic (C10-C28)	0.25	mg/L	0.25	1	01/06/17 07:40	01/11/17 20:42		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 20:42		
n-Pentacosane (S)	71	%.	16-137	1	01/06/17 07:40	01/11/17 20:42	629-99-2	
o-Terphenyl (S)	82	%.	10-121	1	01/06/17 07:40	01/11/17 20:42	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	15/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/06/17 20:21		
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/06/17 20:21	460-00-4	
6020 MET ICPMS	Analytical Metl	nod: EPA 60	20 Preparation Meth	nod: Ef	PA 3010			
Arsenic	0.0052	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:15	7440-38-2	
Chromium	0.0010	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:15	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:15	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:15	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meti	nod: EPA 60	020 Preparation Meth	nod: El	PA 3005A			
Arsenic, Dissolved	1.5	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:46	74 40-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:46	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:46	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:46	7440-62-2	



ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

1,2-Dichloroethane

Date: 01/18/2017 12:36 PM

Sample: DUP004 Lab ID: 2048198007 Collected: 01/03/17 00:00 Receive Parameters Results Units Report Limit DE Prepared Qual 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury ND 0.20 01/09/17 15:19 01/09/17 20:30 7439-97-6 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury, Dissolved ND ug/L 0.20 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene 0.13 0.10 ug/L 1 01/06/17 09:20 01/10/17 13:20 83-32-9 Acenaphthylene ND ug/L 0.10 01/06/17 09:20 01/10/17 13:20 208-96-8 1 Anthracene ND 0.10 01/06/17 09:20 01/10/17 13:20 120-12-7 ug/L 1 Benzo(a)anthracene NΩ 0.10 01/06/17 09:20 01/10/17 13:20 56-55-3 ug/L 1 Benzo(a)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:20 50-32-8 Benzo(b)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:20 205-99-2 Benzo(g,h,i)perylene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:20 191-24-2 Benzo(k)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:20 207-08-9 Chrysene ND 0.10 01/06/17 09:20 01/10/17 13:20 218-01-9 ug/L 1 Dibenz(a,h)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:20 53-70-3 Fluoranthene ND 0.10 ug/L 1 Fluorene ND 0.10 01/06/17 09:20 01/10/17 13:20 86-73-7 ua/L 1 indeno(1,2,3-cd)pyrene ND 0.10 01/06/17 09:20 01/10/17 13:20 193-39-5 ua/L 1 2-Methylnaphthalene ND ug/L 0.10 01/06/17 09:20 01/10/17 13:20 91-57-6 1 Naphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:20 91-20-3 Phenanthrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:20 85-01-8 Pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:20 129-00-0 Surrogates 2-Fluorobiphenyl (S) 80 %. 25-150 1 01/06/17 09:20 01/10/17 13:20 321-60-8 Terphenyl-d14 (S) 81 25-150 %. 1 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 11.3 ug/L 4.0 1 01/06/17 13:10 67-64-1 C9 Benzene ŃΩ ug/L 0.50 01/06/17 13:10 71-43-2 1 Bromodichloromethane ND 0.50 ug/L 1 01/06/17 13:10 75-27-4 Bromoform ND 0.50 01/06/17 13:10 75-25-2 ug/L 1 Bromomethane ND ug/L 0.50 01/06/17 13:10 74-83-9 1 2-Butanone (MEK) ND 2.0 01/06/17 13:10 78-93-3 ug/L 1 Carbon disulfide ND 1.0 01/06/17 13:10 75-15-0 ug/L 1 L3 Carbon tetrachloride ND 0.50 ug/L 1 01/06/17 13:10 56-23-5 Chlorobenzene 01/06/17 13:10 108-90-7 ND 0.50 ug/L 1 Chloroethane ND 0.50 01/06/17 13:10 75-00-3 ug/L 1 Chloroform ND ug/L 0.50 01/06/17 13:10 67-66-3 Chloromethane ND ug/L 0.50 01/06/17 13:10 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 01/06/17 13:10 96-12-8 Dibromochloromethane ND ug/L 0.50 1 01/06/17 13:10 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 01/06/17 13:10 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 01/06/17 13:10 75-71-8 1.1-Dichloroethane ND ug/L 0.50 01/06/17 13:10 75-34-3

REPORT OF LABORATORY ANALYSIS

0.50

ND

ug/L

01/06/17 13:10 107-06-2

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

TOTAL TELEVISION CONTROL CONTROL

Sample: DUP004	Lab ID: 2048	3198007	Collected: 01/03/1	7 00:00	Received: \$608 at a set eter	
Parameters	Results	Units	Report Limit	DF	Prepared CAS No. Qu	ual
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260			
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 13:10 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 13:10 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 13:10 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 13:10 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 13:10 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 13:10 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 13:10 100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 13:10 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 13:10 98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 13:10 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 13:10 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 13:10 108-10-1	
Methyl-tert-butyl ether	8.9	ug/L	0.50	1	01/06/17 13:10 1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 13:10 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 13:10 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 13:10 127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 13:10 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 13:10 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 13:10 79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 13:10 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 13:10 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 13:10 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 13:10 179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/06/17 13:10 95-47-6	
Surrogates		~3. ~	1.0	•	0 17 00 17 10 10 10 17 0	
Dibromofluoromethane (S)	108	%.	72-126	1	01/06/17 13:10 1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1	01/06/17 13:10 460-00-4	
Toluene-d8 (S)	100	%.	79-119	1	01/06/17 13:10 2037-26-5	

Sample: MW-EB106	Lab ID: 204	8198008	Collected: 01/03/1	7 14:28	Received: 01	/04/17 15:08 N	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepai	ration M	lethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	0.26	mg/L	0.25	1	01/06/17 07:40	01/11/17 22:06		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 22:06		
n-Pentacosane (S)	50	%.	16-137	1	01/06/17 07:40	01/11/17 22:06	629-99-2	
o-Terphenyl (S)	66	%.	10-121	1	01/06/17 07:40	01/11/17 22:06	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 18:34		
4-Bromofluorobenzene (S)	86	%.	44-148	1		01/12/17 18:34	460-00-4	



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

Date: 01/18/2017 12:36 PM ·

2048198

Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 Freparation Method: EPA 3010 Preparation Method: EPA 3010 <td< th=""><th>2010100</th><th></th><th colspan="9"></th></td<>	2010100										
Analytical Method: EPA 6020 Preparation Method: EPA 3010	Sample: MW-EB106	Lab ID: 204	8198008	Collected: 01/03/	17 14:28	Received: 01	16441865:181U	Mix: Water			
American	Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual		
ND mg/L 0.0010 1 0.1709/17 15.22 01/13/17 22.19 7440 47.3 74.0 47.3 74.0	6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Met	hod: EP/	A 3010					
Laad	Arsenic	0.0014	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7440-38-2			
No	Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7440-47-3			
Analytical Method: EPA 8020 Preparation Method: EPA 5005A	Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7439-92-1			
Arsenic, Dissolved	Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:19	7440-62-2			
Chromium, Dissolved 30.6 ug/l. 1.0 1 01/10/17 11-144 01/13/17 23-50 74-04-7-3 74-04-	6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 6	020 Preparation Met	hod: EP	A 3005A					
Lead, Dissolved ND	Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7440-38-2			
Vanishium, Dissolved ND ug/L 5.0 1 01/10/17 11:44 01/13/17 23:50 740-62-2 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury, Dissolved (LF) Analytical Method: EPA 8740 Preparation Method: EPA 7470 7470 Mercury, Dissolved (LF) Analytical Method: EPA 8740 Preparation Method: EPA 87510 7470 Mercury, Dissolved (LF) Analytical Method: EPA 87510 The paration Method: EPA 87510 Method 17,171 7439-97-6	Chromium, Dissolved	30.6	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7440-47-3			
Marcury Marc	Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7439-92-1			
Mercury ND ug/L 0.20 1 01/09/17 15:19 01/09/17 20:32 7439-97-6 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury, Dissolved ND ug/L 0.20 1 01/10/17 12:30 01/10/17 17:28 7439-97-6 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 83-32-9 Acenaphthylene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 208-96-8 Anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 208-96-8 Anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 208-96-8 Benzo(a)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 208-96-8 Benzo(a)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 50-32-8 Benzo(a)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 50-32-8 Benzo(b)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 50-32-8 Benzo(b)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 50-32-8 Benzo(b)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 50-32-8 Benzo(b)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 50-92-8 Benzo(a)hiphracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 50-92-8 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 51-09-92 Chrysene ND ug/L 0.1	Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:50	7440-62-2			
Mercury, Dissolved (LF)	7470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Met	hod: EP	A 7470					
Mercury, Dissolved ND ug/L 0.20 1 01/10/17 12:30 01/10/17 17:28 7439-97-8	Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:32	7439-97-6			
### Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene	7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Met	hod: EP	A 7470					
Acenaphthene	Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:28	7439-97-6			
Acenaphthylene	8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Prepara	tion Metl	nod: EPA 3510					
Anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 120-12-7 Benzo(a)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 55-5-3 Benzo(a)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 50-32-8 Benzo(a)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-99-2 Benzo(g,h,i)perylene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-99-2 Benzo(g,h,i)perylene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-08-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 218-01-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 218-01-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 218-01-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 218-01-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 218-01-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 218-01-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 218-01-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 218-01-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-04-4-0 Fluorene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-04-4-0 Fluorene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-04-4-0 Fluorene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 29-03-39-5 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 29-03-39-5 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 29-03-39-5 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 29-03-39-5 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 29-03-39-5 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-03-03-2 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-03-2 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-03-2 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-03-2 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-03-2 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-03-2 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-03-2 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-03-2 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 20-03-2 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10	Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	83-32-9			
Benzo(a)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 56-55-3 Benzo(a)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 56-55-3 Benzo(b)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 295-99-2 Benzo(b)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 295-99-2 Benzo(k)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 297-08-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 297-08-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 297-08-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 298-03-3 Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 93-39-5 Fluorene	Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	208-96-8			
Benzo(a)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 50-32-8 Benzo(b)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 205-99-2 Benzo(g)h,i)perylene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 191-24-2 Benzo(g)h,i)perylene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 207-08-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 207-08-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 208-01-9-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 258-70-3 Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 86-73-7 Indeno(1,2,3-od)yrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-57-6 Nap	Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	120-12-7			
Benzo(b)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 205-99-2 Benzo(g), h)perylene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 191-24-2 Benzo(k)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 207-08-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 207-08-9 Dibenz(a,h)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 238-01-9 Dibenz(a,h)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 53-70-3 Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 264-40-0 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-57-6	Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	56-55-3			
Benzo(g,h,i)perylene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 191-24-2 Benzo(k)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 207-08-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 207-08-9 Dibenz(a,h)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 53-70-3 Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 206-44-0 Fluorene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 86-73-7 Indenct(1,2,3-cd)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-57-6 ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-57-6 Pyrene	Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	50-32-8			
Benzo(k)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 207-08-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 218-01-9 Dibenz(a,h)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 53-70-3 Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 206-44-0 Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 206-44-0 Fluorene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 206-44-0 Indemo(1,2,3-cd)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 99-39-9-5 2-Menanthrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-20-3 Pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Perpleneyl-d14 (S)	Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	205-99-2			
Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 218-01-9 Dibenz(a,h)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 53-70-3 Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 206-44-0 Fluorene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 206-44-0 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-57-6 Naphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-20-3 Phenanthrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 85-01-8 Pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 321-60-8 2-Fluorobiphenyl (Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	191-24-2			
Dibenz(a,h)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 53-70-3 Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 206-44-0 Fluorene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 86-73-7 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-20-3 Naphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-20-3 Phenanthrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 85-01-8 Pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Terphenyl-d14 (S) 99 % 25-150 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Terphenyl-d	Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	207-08-9			
Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 206-44-0 Fluorene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 86-73-7 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-57-6 Naphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-57-6 Phenanthrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-20-3 Pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 129-00-0 Surrogates 2-Fluorobiphenyl (S) 99 % 25-150 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Terphenyl-d14 (S) Analytical Method: EPA 5030B/8260 4 01/06/17 09:20 01/10/17 13:28 67-64-1 C9 <td>Chrysene</td> <td>ND</td> <td>ug/L</td> <td>0.10</td> <td>1</td> <td>01/06/17 09:20</td> <td>01/10/17 13:40</td> <td>218-01-9</td> <td></td>	Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	218-01-9			
Fluorene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 86-73-7 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-57-6 Naphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-57-6 Naphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-20-3 Phenanthrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 85-01-8 Pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 129-00-0 Surrogates Surrog	Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	53-70-3			
Indeno(1,2,3-cd)pyrene	Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	206-44-0			
2-Methylnaphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-57-6 Naphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-20-3 Phenanthrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-20-3 Phenanthrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 85-01-8 Pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 129-00-0 Surrogates 2-Fluorobiphenyl (S) 99 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Terphenyl-d14 (S) 100 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 1718-51-0 Page 100 100 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 1718-51-0 Page 100 100 Page 100 100 Page 100 100/17 13:40 1718-51-0 Page 100 100/17 13:40 1718-51-0 Page 100 100/17 13:40 1718-51-0 Page 100 100/17 13:40 Page	Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	86-73-7			
Naphthalene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 91-20-3 Phenanthrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 85-01-8 Pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 129-00-0 Surrogates 2-Fluorobiphenyl (S) 99 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Terphenyl-d14 (S) 100 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Terphenyl-d14 (S) 100 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Terphenyl-d14 (S) Analytical Method: EPA 5030B/8260	Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	193-39-5			
Phenanthrene	2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	91-57-6			
Pyrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 13:40 129-00-0 Surrogates 2-Fluorobiphenyl (S) 99 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Terphenyl-d14 (S) 100 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 321-60-8 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone. 16.4 ug/L 4.0 1 01/06/17 13:28 67-64-1 C9 Benzene ND ug/L 0.50 1 01/06/17 13:28 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/06/17 13:28 75-27-4 Bromomethane ND ug/L 0.50 1 01/06/17 13:28 75-25-2	Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	91-20-3			
Surrogates 2-Fluorobiphenyl (S) 99 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Terphenyl-d14 (S) 100 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 CPA 4.0 1 01/06/17 13:28 67-64-1 CPA Benzene ND ug/L 0.50 1 01/06/17 13:28 71-43-2 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/06/17 13:28 75-27-4 Bromomethane ND ug/L 0.50 1 01/06/17 13:28 75-25-2	Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	85-01-8			
2-Fluorobiphenyl (S) 99 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 321-60-8 Terphenyl-d14 (S) 100 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone. 16.4 ug/L 4.0 1 01/06/17 13:28 67-64-1 C9 Benzene ND ug/L 0.50 1 01/06/17 13:28 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/06/17 13:28 75-27-4 Bromoform ND ug/L 0.50 1 01/06/17 13:28 75-25-2 Bromomethane ND ug/L 0.50 1 01/06/17 13:28 75-25-2 Bromomethane ND ug/L 0.50 1 01/06/17 13:28 74-83-9	•	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	129-00-0			
Responde (S) 100 %. 25-150 1 01/06/17 09:20 01/10/17 13:40 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone. 16.4 ug/L 4.0 1 01/06/17 13:28 67-64-1 C9 Benzene ND ug/L 0.50 1 01/06/17 13:28 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/06/17 13:28 75-27-4 Bromomethane ND ug/L 0.50 1 01/06/17 13:28 74-83-9			0.4	05.450	_	0.410.01477.00.00	01/10/15 10 10				
8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone. 16.4 ug/L 4.0 1 01/06/17 13:28 67-64-1 C9 Benzene ND ug/L 0.50 1 01/06/17 13:28 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/06/17 13:28 75-27-4 Bromoform ND ug/L 0.50 1 01/06/17 13:28 75-25-2 Bromomethane ND ug/L 0.50 1 01/06/17 13:28 74-83-9					1						
Acetone. 16.4 ug/L 4.0 1 01/06/17 13:28 67-64-1 C9 Benzene ND ug/L 0.50 1 01/06/17 13:28 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/06/17 13:28 75-27-4 Bromoform ND ug/L 0.50 1 01/06/17 13:28 75-25-2 Bromomethane ND ug/L 0.50 1 01/06/17 13:28 74-83-9	Terphenyi-d14 (S)	100	%.	25-150	1	0.1/06/17.09:20	01/10/17 13:40	1718-51-0			
Benzene ND ug/L 0.50 1 01/06/17 13:28 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/06/17 13:28 75-27-4 Bromoform ND ug/L 0.50 1 01/06/17 13:28 75-25-2 Bromomethane ND ug/L 0.50 1 01/06/17 13:28 74-83-9	8260 MSV Low Level	Analytical Metl	hod: EPA 5	030B/8260							
Bromodichloromethane ND ug/L 0.50 1 01/06/17 13:28 75-27-4 Bromoform ND ug/L 0.50 1 01/06/17 13:28 75-25-2 Bromomethane ND ug/L 0.50 1 01/06/17 13:28 74-83-9			ug/L						C9		
Bromoform ND ug/L 0.50 1 01/06/17 13:28 75-25-2 Bromomethane ND ug/L 0.50 1 01/06/17 13:28 74-83-9	Benzene	ND	_	0.50	1		01/06/17 13:28	71-43-2			
Bromomethane ND ug/L 0.50 1 01/06/17 13:28 74-83-9	Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 13:28	75-27-4			
	Bromoform	ND	ug/L	0.50	1		01/06/17 13:28	75-25-2			
2-Butanone (MEK) ND ug/L 2.0 1 01/06/17 13:28 78-93-3			ug/L	0.50	1		01/06/17 13:28	74-83-9			
	2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 13:28	78-93-3			

REPORT OF LABORATORY ANALYSIS

ace Analytical Services, LLC 170 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-EB106 Lab ID: 2048198008 Collected: 01/03/17 14:28 Receive Parameters Results Units DF Prepared CAS No. Report Limit Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Carbon disulfide ND ug/L 1.0 1 01/06/17 13:28 75-15-0 L3 Carbon tetrachloride ND 0.50 01/06/17 13:28 56-23-5 ug/L 1 Chlorobenzene ND 01/06/17 13:28 108-90-7 ug/L 0.50 Chloroethane ND 0.50 01/06/17 13:28 75-00-3 ug/L Chloroform ND 0.50 01/06/17 13:28 67-66-3 1 ua/L 01/06/17 13:28 74-87-3 Chloromethane ND 0.50 ug/L 1,2-Dibromo-3-chloropropane ND 0.20 1 01/06/17 13:28 96-12-8 ua/L Dibromochloromethane ND ug/L 0.50 1 01/06/17 13:28 124-48-1 1,2-Dibromoethane (EDB) ND 1.0 01/06/17 13:28 106-93-4 ua/L 1 Dichlorodifluoromethane ND ug/L 1.0 01/06/17 13:28 75-71-8 1,1-Dichloroethane ND ug/L 0.50 01/06/17 13:28 75-34-3 1 1,2-Dichloroethane ND ug/L 0.50 01/06/17 13:28 107-06-2 1 1,1-Dichloroethene ND 0.50 01/06/17 13:28 75-35-4 ug/L 1 cis-1,2-Dichloroethene ND 01/06/17 13:28 156-59-2 ug/L 1.0 1 trans-1,2-Dichloroethene ND 0.50 01/06/17 13:28 156-60-5 ug/L 1 1,2-Dichloropropane ND 0.50 01/06/17 13:28 78-87-5 ug/L cis-1,3-Dichloropropene ND ug/L 0.50 01/06/17 13:28 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 01/06/17 13:28 10061-02-6 Ethylbenzene ND ug/L 0.50 01/06/17 13:28 100-41-4 2-Hexanone ND ug/L 1.0 01/06/17 13:28 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 01/06/17 13:28 98-82-8 Methyl acetate ND ug/L 2.0 1 01/06/17 13:28 79-20-9 Methylene Chloride ND ug/L 0.50 01/06/17 13:28 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 01/06/17 13:28 108-10-1 Methyl-tert-butyl ether 4.3 0.50 ug/L 01/06/17 13:28 1634-04-4 Styrene ND ug/L 1.0 1 01/06/17 13:28 100-42-5 1,1,2,2-Tetrachloroethane NΠ ug/L 0.50 1 01/06/17 13:28 79-34-5 Tetrachloroethene ND 01/06/17 13:28 127-18-4 ug/L 0.50 1 Toluene ND ug/L 0.50 1 01/06/17 13:28 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 01/06/17 13:28 71-55-6 1 1,1,2-Trichloroethane ND ug/L 0.50 1 01/06/17 13:28 79-00-5 Trichloroethene ND ug/L 0.50 1 01/06/17 13:28 79-01-6 Trichlorofluoromethane ND 0.50 ug/L 01/06/17 13:28 75-69-4 1 Vinyl chloride ug/L ND 0.50 1 01/06/17 13:28 75-01-4 m&p-Xylene ND ug/L 2.0 1 01/06/17 13:28 179601-23-1 o-Xylene ND ug/L 1.0 1 01/06/17 13:28 95-47-6 Surrogates Dibromofluoromethane (\$) 107 %. 72-126 01/06/17 13:28 1868-53-7 4-Bromofluorobenzene (S) 97 %. 68-124 01/06/17 13:28 460-00-4 1 Toluene-d8 (S) 99 79-119 01/06/17 13:28 2037-26-5



Pace Analytical Services, LLC 1000 Riverbend Blvd - Suite F

St. Rose, LA 70087 (504)469-0333

ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

Date: 01/18/2017 12:36 PM

2048198

Sample: MW-EB107	Lab ID: 204	8198009	Collected: 01/03/1	7 15:11	Received:	714	ain. Vater	
Parameters	Results	Units	Report Limit	DF	Prepared	Salto ditte	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration N	lethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 22:34		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 22:34		
Surrogates								
n-Pentacosane (S)	48	%.	16-137	1		01/11/17 22:34		
o-Terphenyl (S)	51	%.	10-121	1	01/06/17 07:40	01/11/17 22:34	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 21:11		
Surrogates								
4-Bromofluorobenzene (S)	85	%.	44-148	1		01/12/17 21:11	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	320 Preparation Met	hod: EP	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:23	7440-38-2	
Chromium	0.0013	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:23	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:23	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:23	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Met	hod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:54	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/13/17 23:54		
Lead, Dissolved	ND	ug/L	1.0	1		01/13/17 23:54		
Vanadium, Dissolved	ND	ug/L	5.0	1		01/13/17 23:54		
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Met	hod: EP.	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:34	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	170 Preparation Met	hod: EP	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:30	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	nod: EPA 82	270 by SIM Preparat	ion Metl	hod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1		01/10/17 14:00		
Anthracene	ND	ug/L	0.10	1		01/10/17 14:00		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1		01/10/17 14:00		
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/10/17 14:00		
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20			



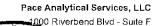
ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB107 Lab ID: 2048198009 Collected: 01/03/17 15:11 Receiv Parameters Results Prepared Units Report Limit DF Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 ND Pyrene 0.10 ua/L Surrogates 2-Fluorobiphenyl (S) qq %. 25-150 1 Terphenyl-d14 (S) 100 %. 25-150 1 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone ND ug/L 4.0 1 01/06/17 13:46 67-64-1 Benzene ND ug/L 0.50 1 01/06/17 13:46 71-43-2 Bromodichloromethane ND ug/L 0.50 01/06/17 13:46 75-27-4 1 Bromoform ND ug/L 0.50 1 01/06/17 13:46 75-25-2 Bromomethane ND ug/L 0.50 1 01/06/17 13:46 74-83-9 2-Butanone (MEK) ND ug/L 2.0 1 01/06/17 13:46 78-93-3 Carbon disulfide ND 01/06/17 13:46 75-15-0 ug/L 1.0 1.3 Carbon tetrachloride ND 0.50 01/06/17 13:46 56-23-5 ug/L Chlorobenzene ND 0.50 01/06/17 13:46 108-90-7 ug/L Chloroethane ND 0.50 01/06/17 13:46 75-00-3 ug/L Chloroform ND ug/L 0.50 01/06/17 13:46 67-66-3 Chloromethane ND ug/L 0.50 01/06/17 13:46 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 01/06/17 13:46 96-12-8 Dibromochloromethane ND ug/L 0.50 01/06/17 13:46 124-48-1 ND 1,2-Dibromoethane (EDB) ug/L 1.0 1 01/06/17 13:46 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 01/06/17 13:46 75-71-8 ND 1,1-Dichloroethane ug/L 0.50 1 01/06/17 13:46 75-34-3 01/06/17 13:46 107-06-2 1,2-Dichloroethane 0.61 0.50ug/L 1 NΩ 1,1-Dichloroethene 0.50 01/06/17 13:46 75-35-4 ug/L 1 cis-1.2-Dichloroethene NĐ 01/06/17 13:46 156-59-2 ug/L 1.0 1 trans-1,2-Dichloroethene ND 01/06/17 13:46 156-60-5 ug/L 0.50 1 ND 1.2-Dichloropropane ug/L 0.50 01/06/17 13:46 78-87-5 1 ND cis-1,3-Dichloropropene 0.50 01/06/17 13:46 10061-01-5 ug/L 1 trans-1,3-Dichloropropene ND 0.50 01/06/17 13:46 10061-02-6 ug/L 1 Ethylbenzene ND ug/L 0.50 1 01/06/17 13:46 100-41-4 2-Hexanone ND 01/06/17 13:46 591-78-6 ug/L 1.0 1 Isopropylbenzene (Cumene) ND 1.0 01/06/17 13:46 98-82-8 ug/L 1 ug/L Methyl acetate ND 2.0 01/06/17 13:46 79-20-9 1 Methylene Chloride ND ug/L 0.50 1 01/06/17 13:46 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 01/06/17 13:46 108-10-1 Methyl-tert-butyl ether 1.6 ug/L 0.50 1 01/06/17 13:46 1634-04-4 Styrene ND uq/L 1.0 1 01/06/17 13:46 100-42-5 1,1,2,2-Tetrachloroethane ND uq/L 0.50 1 01/06/17 13:46 79-34-5 Tetrachloroethene ND ug/L 0.50 1 01/06/17 13:46 127-18-4 01/06/17 13:46 108-88-3 Toluene ND ug/L 0.50 1,1,1-Trichloroethane ND ug/L 0.50 01/06/17 13:46 71-55-6 1,1,2-Trichloroethane ND ug/L 0.50 01/06/17 13:46 79-00-5 Trichloroethene ND ug/L 0.50 01/06/17 13:46 79-01-6 Trichlorofluoromethane ND ug/L 0.50 01/06/17 13:46 75-69-4 Vinyl chloride ND ug/L 0.50 01/06/17 13:46 75-01-4 m&p-Xylene ND ug/L 2.0 01/06/17 13:46 179601-23-1



01/12/17 21:37 460-00-4

01/09/17 15:32 01/13/17 22:27 7440-38-2

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Collected: 01/03/17 15:11

Received:

Surrogates

Arsenic

Lead

Chromium

Vanadium

6020 MET ICPMS

4-Bromofluorobenzene (S)

Date: 01/18/2017 12:36 PM

PUMA TERMINAL MW-SAMPLING

Lab ID: 2048198009

Pace Project No.: 2048198

Sample: MW-EB107

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzeu	CAS No.	Qual
8260 MSV Low Level	Analytical Met	nod: EPA 50	30B/8260					
o-Xylene	ND	ug/L	1.0	1		01/06/17 13:46	95-47-6	
Surrogates								
Dibromofluoromethane (S)	109	%.	72-126	1		01/06/17 13:46	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 13:46	460-00-4	
Toluene-d8 (S)	100	%.	79-119 ·	1		01/06/17 13:46	2037-26-5	
Sample: MW-EB108	Lab ID: 204	8198010	Collected: 01/03/1	17 16:01	Received: 01	/04/17 15:08 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 80	115B Modified Prepa	ration N	/lethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 23:02		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 23:02		
n-Pentacosane (S)	51	%.	16-137	1	01/06/17 07:40	01/11/17 23:02	629-99-2	
o-Terphenyl (S)	55	%.	10-121	1	01/06/17 07:40	01/11/17 23:02	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	15/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 21:37		

44-148

0.0010

0.0010

0.0010

ND mg/L 0.0050 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

86

ND

ND

ND

%.

mg/L

mg/L

mg/L

Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:58	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:58	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:58	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:58	7440-62-2

Analytical Method: EPA 6020 Preparation Method: EPA 3010

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	01/09/17 15:19 01/09/17 20:36 7439-97-6

Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury, Dissolved (LF)

Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	208-96-8
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	56-55-3



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

Date: 01/18/2017 12:36 PM

2048198

Sample: MW-EB108 Lab ID: 2048198010 Collected: 01/03/17 16:01 Rec Parameters Results Units Report Limit AS No. Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SiM Preparation Method: EPA 3510 ND 01/06/17 09:20 01/10/17 14:20 50-32-8 Benzo(a)pyrene 0.10 1 ua/L Benzo(b)fluoranthene ND ug/L 0.10 01/06/17 09:20 01/10/17 14:20 205-99-2 Benzo(g,h,i)perylene ND 0.10 01/06/17 09:20 01/10/17 14:20 191-24-2 ug/L 1 Benzo(k)fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 14:20 207-08-9 Chrysene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 14:20 218-01-9 Dibenz(a.h)anthracene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 14:20 53-70-3 Fluoranthene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 14:20 206-44-0 Fluorene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 14:20 86-73-7 Indeno(1,2,3-cd)pyrene 01/06/17 09:20 01/10/17 14:20 ND ug/L 0.10 1 193-39-5 2-Methylnaphthalene ND 0.10 01/06/17 09:20 01/10/17 14:20 91-57-6 ug/L 1 Naphthalene ND 0.10 01/06/17 09:20 01/10/17 14:20 91-20-3 ug/L 1 Phenanthrene ND ug/L 0.10 1 01/06/17 09:20 01/10/17 14:20 85-01-8 Pyrene ND 0.10 1 01/06/17 09:20 01/10/17 14:20 129-00-0 ug/L Surrogates 2-Fluorobiphenyl (S) 100 %. 25-150 1 01/06/17 09:20 01/10/17 14:20 321-60-8 Terphenyl-d14 (S) 102 %. 25-150 1 01/06/17 09:20 01/10/17 14:20 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 5.9 ug/L 4.0 1 01/06/17 14:03 67-64-1 C9 Benzene ND ug/L 0.50 1 01/06/17 14:03 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/06/17 14:03 75-27-4 Bromoform ND ug/L 0.50 1 01/06/17 14:03 75-25-2 ND Bromomethane 0.50 1 01/06/17 14:03 74-83-9 ug/L ND 2-Butanone (MEK) 2.0 1 01/06/17 14:03 78-93-3 ug/L MΩ 01/06/17 14:03 75-15-0 Carbon disulfide 1 13 ug/L 1.0 Carbon tetrachloride ND 0.50 1 01/06/17 14:03 56-23-5 ug/L 01/06/17 14:03 108-90-7 Chlorobenzene ND ug/L 0.50 1 Chloroethane ND ug/L 0.50 1 01/06/17 14:03 75-00-3 ND Chloroform 0.50 1 01/06/17 14:03 67-66-3 ug/L ND 0.50 Chloromethane 1 01/06/17 14:03 74-87-3 ug/L 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 01/06/17 14:03 96-12-8 Dibromochloromethane ND 0.50 01/06/17 14:03 124-48-1 ug/L 1 1,2-Dibromoethane (EDB) ND ug/L 1.0 01/06/17 14:03 106-93-4 1 ug/L Dichlorodifluoromethane ND 1.0 01/06/17 14:03 75-71-8 1 1.1-Dichloroethane ND ug/L 0.50 01/06/17 14:03 75-34-3 1 1,2-Dichloroethane NΠ ug/L 0.50 1 01/06/17 14:03 107-06-2 1,1-Dichloroethene ND ug/L 0.50 1 01/06/17 14:03 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/06/17 14:03 156-59-2 trans-1,2-Dichloroethene ND 0.50 ug/L 1 01/06/17 14:03 156-60-5 1,2-Dichloropropane ND 0.50 01/06/17 14:03 78-87-5 ug/L 1 cis-1,3-Dichloropropene ND uo/L 0.50 1 01/06/17 14:03 10061-01-5 trans-1,3-Dichloropropene ND 0.50 01/06/17 14:03 10061-02-6 ua/L 1 Ethylbenzene ND 0.50 1 01/06/17 14:03 100-41-4 ua/L 2-Hexanone ND ug/L 1.0 1 01/06/17 14:03 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 1 01/06/17 14:03 98-82-8 Methyl acetate ND ug/L 2.0 1 01/06/17 14:03 79-20-9 Methylene Chloride ND ug/L 0.50 1 01/06/17 14:03 75-09-2

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Collected: 01/03/17 16:01

Project:

PUMA TERMINAL MW-SAMPLING

Lab ID: 2048198010

ND

ND

ND

ND

ND

ND

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

Pace Project No.: 2048198

1,2-Dibromo-3-chloropropane

Dibromochloromethane

1,2-Dibromoethane (EDB)

Date: 01/18/2017 12:36 PM

Dichlorodifluoromethane

1,1-Dichloroethane

1,2-Dichloroethane

Sample: MW-EB108

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	.CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:03	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 14:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:03	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:03	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 14:03		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:03	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:03		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:03	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:03		i
o-Xvlene	ND	ug/L	1.0	1		01/06/17 14:03		•
Surrogates	113	49.2	.,,	•		3 11 3 3 11 1 11 3 3	35 5	
Dibromofluoromethane (S)	107	%.	72-126	1		01/06/17 14:03	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 14:03	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/06/17 14:03	2037-26-5	
Sample: FB-010317	Lab ID: 204		Collected: 01/03/1				Matrix: Water	
Parameters	Results —	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 19:00		
4-Bromofluorobenzene (S)	86	%.	44-148	1		01/12/17 19:00	460-00-4	
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	12.8	ug/L	4.0	1		01/06/17 14:21	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 14:21	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 14:21	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 14:21	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 14:21	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 14:21		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 14:21	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:21		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:21		
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:21		
Chloroform	ND	ug/L	0.50	1		01/06/17 14:21		
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:21		
4.0 Dibana 0 abb	LID	-5	0.00			01/00/17 11 01		

REPORT OF LABORATORY ANALYSIS

0.20

0.50

1.0

1.0

0.50

0.50

1

01/06/17 14:21 96-12-8

01/06/17 14:21 124-48-1

01/06/17 14:21 106-93-4

01/06/17 14:21 75-71-8

01/06/17 14:21 75-34-3

01/06/17 14:21 107-06-2



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

Gasoline Range Organics

4-Bromofluorobenzene (S)

8260 MSV Low Level

Bromodichloromethane

Date: 01/18/2017 12:36 PM

Surrogates

Acetone

Benzene

Bromoform

Bromomethane

Carbon disulfide

2-Butanone (MEK)

2048198

Sample: FB-010317	Lab ID: 204	8198011	Collected: 01/03/1	7 16:10	Received	V17/15/08	Water	
Parameters	Results	Units	Report Limit	DF	Prepared	SAGO TION	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:21	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:21	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:21	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:21	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:21	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:21		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 14:21		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 14:21		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:21		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:21		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:21		
Styrene	ND	ug/L	1.0	1		01/06/17 14:21		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:21		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:21		
Toluene	ND	ug/L	0.50	1		01/06/17 14:21		
1,1,1-Trichloroethane	ND	ug/L ug/L	0.50	1		01/06/17 14:21		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:21		
Trichloroethene	ND ND	ug/L ug/L	0.50	1		01/06/17 14:21		
Trichlorofluoromethane	ND	ug/L ug/L	0.50	1		01/06/17 14:21		
Vinyl chloride	ND	-	0.50	1				
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:21		
o-Xylene		ug/L				01/06/17 14:21		
Surrogates	ND	ug/L	1.0	1		01/06/17 14:21	95-47 - 6	
Dibromofluoromethane (S)	105	%.	72-126	1		04/06/47 44:04	1000 E2 7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 14:21 01/06/17 14:21		
Toluene-d8 (S)	100	76. %.		1				
roluene-do (3)	100	7e.	79-119	Į.		01/06/17 14:21	2037-20-5	
Sample: TB-010417	Lab ID: 204	8198012	Collected: 01/04/1	7 00:00	Received: 0	1/04/17 15:08 M	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

REPORT OF LABORATORY ANALYSIS

50.0

4.0

0.50

0.50

0.50

0.50

2.0

1.0

7

1

1

1

1

1

44-148

01/12/17 22:03

01/12/17 22:03 460-00-4

01/06/17 14:39 67-64-1

01/06/17 14:39 71-43-2

01/06/17 14:39 75-27-4

01/06/17 14:39 75-25-2

01/06/17 14:39 74-83-9

01/06/17 14:39 78-93-3

01/06/17 14:39 75-15-0

ug/L

%.

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

Analytical Method: EPA 5030B/8260

ND

87

169

ND

ND

ND

ND

ND

ND

L3

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Diesel Range Organic (C10-C28)

Date: 01/18/2017 12:36 PM

Sample: TB-010417 Lab ID: 2048198012 Collected: 01/04/17 00:00 Water Parameters Results Units DF Prepared Report Limit CAS No. Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Carbon tetrachloride ND ug/L 0.50 01/06/17 14:39 56-23-5 Chlorobenzene ND ug/L 0.50 01/06/17 14:39 108-90-7 Chloroethane ND 0.50 ug/L 01/06/17 14:39 75-00-3 Chloroform ND 0.50 01/06/17 14:39 67-66-3 ug/L 1 Chloromethane ND 0.50 ug/L 1 01/06/17 14:39 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 01/06/17 14:39 96-12-8 Dibromochloromethane ND ug/L 0.50 01/06/17 14:39 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 01/06/17 14:39 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 01/06/17 14:39 75-71-8 1,1-Dichloroethane ND ug/L 0.50 01/06/17 14:39 75-34-3 1,2-Dichloroethane ND 0.50 ug/L 01/06/17 14:39 107-06-2 1.1-Dichloroethene ND ug/L 0.50 01/06/17 14:39 75-35-4 cis-1.2-Dichloroethene ND ug/L 1.0 01/06/17 14:39 156-59-2 trans-1,2-Dichloroethene ND 0.50 ua/L 01/06/17 14:39 156-60-5 1,2-Dichloropropane ND ug/L 0.50 01/06/17 14:39 78-87-5 1 cis-1,3-Dichloropropene ND ug/L 0.50 01/06/17 14:39 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 01/06/17 14:39 10061-02-6 Ethylbenzene ND 01/06/17 14:39 100-41-4 ug/L 0.50 1 2-Hexanone ND ug/L 1.0 1 01/06/17 14:39 591-78-6 Isopropylbenzene (Cumene) NΩ ug/L 1.0 1 01/06/17 14:39 98-82-8 Methyl acetate ND ug/L 2.0 1 01/06/17 14:39 79-20-9 Methylene Chloride NΩ ug/L 0.50 1 01/06/17 14:39 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 01/06/17 14:39 108-10-1 Methyl-tert-butyl ether ND 0.50 ug/L 1 01/06/17 14:39 1634-04-4 Styrene ND ug/L 1.0 1 01/06/17 14:39 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 1 01/06/17 14:39 79-34-5 Tetrachloroethene ND ug/L 0.501 01/06/17 14:39 127-18-4 Toluene ND ug/L 0.50 1 01/06/17 14:39 108-88-3 1,1,1-Trichloroethane ND 0.50 ug/L 1 01/06/17 14:39 71-55-6 1,1,2-Trichloroethane ND 0.50 ua/L 1 01/06/17 14:39 79-00-5 Trichloroethene ND ug/L 0.50 1 01/06/17 14:39 79-01-6 Trichlorofluoromethane ND ug/L 0.50 1 01/06/17 14:39 75-69-4 Vinyl chloride ND ug/L 0.50 1 01/06/17 14:39 75-01-4 m&p-Xylene ND ug/L 2.0 1 01/06/17 14:39 179601-23-1 o-Xylene ND ug/L 1.0 1 01/06/17 14:39 95-47-6 Surrogates Dibromofluoromethane (S) 108 %. 72-126 01/06/17 14:39 1868-53-7 4-Bromofluorobenzene (S) 98 %. 68-124 01/06/17 14:39 460-00-4 1 Toluene-d8 (S) 101 %. 79-119 1 01/06/17 14:39 2037-26-5 Sample: EB-010417 Lab ID: 2048198013 Collected: 01/04/17 08:58 Received: 01/04/17 15:08 Matrix: Water Parameters Results Units DF Report Limit Prepared Analyzed CAS No. Qual 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

REPORT OF LABORATORY ANALYSIS

0.25

01/06/17 07:40 01/11/17 23:30

ND

mg/L



ANALYTICAL RESULTS

Project:

Pyrene

Date: 01/18/2017 12:36 PM

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Pace Project No.: 2048198					<i>18</i> /	#5118.V	イニ	
Sample: EB-010417	Lab ID:	2048198013	Collected: 01/04/	17 08:58	Received 01	/04/1 7 1.5 0 8	ack: Water	
Parameters	Results	Units	Report Limit	DF	Prepart	TO THE STATE OF	CAS No.	Qual
8015M DRO/ORO Organics	Analytical I	Method: EPA 80	015B Modified Prepa	aration M				
Oil Range Organics (>C28-C40) Surrogates	NE) mg/L	0.50	1	01/06/17 07:40	01/11/17 23:30		
n-Pentacosane (S)	48	3 %.	16-137	1	01/06/17 07:40	01/11/17 23:30	629-99-2	
o-Terphenyl (S)	50	%.	10-121	1	01/06/17 07:40	01/11/17 23:30	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical i	Method: EPA 80	015/8021					
Gasoline Range Organics Surrogates	NE	S	50.0	1		01/12/17 22:29		
4-Bromofluorobenzene (S)	89	9 %.	44-148	1		01/12/17 22:29	460-00-4	
6020 MET ICPMS	Analytical	Method: EPA 6	020 Preparation Met	hod: EP	A 3010			
Arsenic	NE) mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:31	7440-38-2	
Chromium	NE	_	0.0010	1	01/09/17 15:32	01/13/17 22:31	7440-47-3	
Lead	NE	-	0.0010	1	01/09/17 15:32	01/13/17 22:31	7439-92-1	
Vanadium	NE	-	0.0050	1		01/13/17 22:31		
6020 MET ICPMS, Dissolved (LF)	Analytical	Method: EPA 6	020 Preparation Met	hod: EP	4 3005A			
Arsenic, Dissolved	NE) ug/L	1.0	1	01/10/17 11:44	01/14/17 00:01	7440-38-2	
Chromium, Dissolved	NE	•	1.0	1	01/10/17 11:44	01/14/17 00:01	7440-47-3	
Lead, Dissolved	NE	•	1.0	1	01/10/17 11:44	01/14/17 00:01	7439-92-1	
Vanadium, Dissolved	NE	9	5.0	1		01/14/17 00:01		
7470 Mercury	Analytical	Method: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury	NE	O ug/L	0.20	1	01/09/17 15:19	01/09/17 20:38	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical	Method: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury, Dissolved	NE) ug/L	0.20	1	01/10/17 12:30	01/10/17 17:34	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical	Method: EPA 8	270 by SIM Prepara	tion Metl	nod: EPA 3510			
Acenaphthene	NE	D ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	83-32-9	
Acenaphthylene	NE		0.10	1	01/07/17 13:27	01/10/17 17:59	208-96-8	
Anthracene	NE	-	0.10	1	01/07/17 13:27	01/10/17 17:59	120-12-7	
Benzo(a)anthracene	NE	_	0.10	1	01/07/17 13:27	01/10/17 17:59	56-55-3	
Benzo(a)pyrene	NE	_	0.10	1	01/07/17 13:27	01/10/17 17:59	50-32-8	
Benzo(b)fluoranthene	NI	Ş	0.10	1		01/10/17 17:59	=	
Benzo(g,h,i)perylene	NI	-	0.10	1		01/10/17 17:59		
Benzo(k)fluoranthene	NE	5	0.10	1		01/10/17 17:59		
Chrysene	NE		0.10	1		01/10/17 17:59		
Dibénz(a,h)anthracene	NE		0.10	1		01/10/17 17:59		
Fluoranthene	NE NE	-	0.10	1		01/10/17 17:59		
Fluorene	NE NE	_	0.10			01/10/17 17:59 01/10/17 17:59		
		•		1				
Indeno(1,2,3-cd)pyrene	NI NI	0	0.10	1		01/10/17 17:59		
2-Methylnaphthalene	NI	3	0.10	1		01/10/17 17:59		
Naphthalene	N[•	0.10	1		01/10/17 17:59		
Phenanthrene	NE	O ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	85-01-8	

REPORT OF LABORATORY ANALYSIS

ND

ug/L

01/07/17 13:27 01/10/17 17:59 129-00-0



ANALYTICAL RESULTS

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PUMA TERMINAL MW-SAMPLING

Sample: EB-010417	Lab ID: 2048198013 Collected: 01/04/17 08:58		deN63 4.					
Parameters	Results	Units	Report Limit	DF	Perced	*5 X	*CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparat	ion Met				
Surrogates						CO LICE		
2-Fluorobiphenyl (S)	104	%.	25-150	1		7 01/10/17 17:59		
Terphenyl-d14 (S)	103	%.	25-150	1	01/07/17 13:2	7 01/10/17 17:59	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	30B/8260					
Acetone	18.0	ug/L	4.0	1		01/06/17 14:56	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 14:56	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 14:56	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 14:56	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 14:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 14:56		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 14:56		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:56		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:56		
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:56		
Chloroform	ND	ug/L	0.50	1		01/06/17 14:56		
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:56		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 14:56		
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 14:56		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 14:56		
Dichlorodifluoromethane	ND ND	_	1.0					
1,1-Dichloroethane		ug/L		1		01/06/17 14:56		
1,2-Dichloroethane	ND	ug/L	0.50	4		01/06/17 14:56		
•	ND	ug/L	0.50	4		01/06/17 14:56		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:56		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:56		
frans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:56		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:56		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:56		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:56		
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:56	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:56	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 14:56		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 14:56		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:56	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:56	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 14:56	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:56	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:56	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 14:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:56		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:56		
Trichtorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:56		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:56		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:56		1
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:56		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198					1 53	*4	ペンペン	,		
Sample: EB-010417	Lab ID: 204	8198013	Collected: 01/04/1	7 08:58	Received: d	15:08 1606d	WAST			
Parameters	Results	Units	Report Limit	DF	Prepared	A COOL	CEAS No.	Qual		
8260 MSV Low Level	Analytical Method: EPA 5030B/8260									
Surrogates	400	2.6	70.400			04/00/17 14 50	4000 50 5			
Dibromofluoromethane (S)	108	%. %.	72-126	1 1		01/06/17 14:56				
4-Bromofluorobenzene (S) Toluene-d8 (S)	98 101	%.	68-124 79-119	1		01/06/17 14:56 01/06/17 14:56				
10100110 00 (0)	10,	70.	70 110	·		3 17507 17 17.00	2001 200			
Sample: MW-DP1	Lab ID: 204	8198014	Collected: 01/04/1	7 09:36	Received: 01	//04/17 15:08 I	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual		
8015M DRO/ORO Organics	Analytical Met	nod: EPA 80	015B Modified Prepa	ration M	ethod: EPA 3535	5				
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 23:58	ł			
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 23:58	:			
Surrogates			40.407	_	04/00/47 07 40	04/44/47 00 5				
n-Pentacosane (S) o-Terphenyl (S)	41 53	%. %.	16-137 10-121	1 1		01/11/17 23:58 01/11/17 23:58				
o-reiphenyr(o)	ວວ	70.	10-121	'	01/06/17 07.40	01/11/1/ 23.30	0 04-10-1			
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021							
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 22:56	3			
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/12/17 22:56	6 460-00-4			
6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation MetI	nod: EP/	A 3010					
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:35	7440-38-2			
Chromium	0.0013	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:35	5 7440-47-3			
Lead	ND	mg/L	0.0010	1		01/13/17 22:35				
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:35	5 7440-62-2			
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation Met	nod: EP/	A 3005A					
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:05	5 7440-38-2			
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:05	5 7440-47-3			
Lead, Dissolved	ND	ug/L	1.0	1		01/14/17 00:08				
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:05	5 7440-62-2			
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP/	A 7470					
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:40	7439-97-6			
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	4 7470					
Mercury, Dissolved	ПN	ug/L	0.20	1		01/10/17 17:36	6 7439-97-6			
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparat	ion Meth	nod: EPA 3510					
Acenaphthene	ND	ug/L	0.10	1		01/10/17 18:19				
Acenaphthylene	NĐ	ug/L	0.10	1		01/10/17 18:19				
Anthracene	ND	ug/L	0.10	1		01/10/17 18:19				
Benzo(a)anthracene	ND	ug/L	0.10	1		01/10/17 18:19				
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	9 50-32-8			

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No .:

Date: 01/18/2017 12:36 PM

2048198

Sample: MW-DP1 Lab ID: 2048198014 Collected: 01/04/17 09:36 Receiv Prepare Parameters Results Units Report Limit Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Benzo(b)fluoranthene ND 0.10 ug/L Benzo(g,h,i)perylene ND 0.10 01/07/17 13:27 01/10/17 18:19 191-24-2 ug/L ND 0.10 01/07/17 13:27 01/10/17 18:19 207-08-9 Benzo(k)fluoranthene ug/L 1 ND 0.10 01/07/17 13:27 01/10/17 18:19 218-01-9 Chrysene ug/L 1 Dibenz(a,h)anthracene ND 0.10 01/07/17 13:27 01/10/17 18:19 53-70-3 ug/L 1 01/07/17 13:27 01/10/17 18:19 206-44-0 Fluoranthene ND ug/L 0.10 1 Fluorene ND ua/L 0.10 1 01/07/17 13:27 01/10/17 18:19 86-73-7 Indeno(1.2.3-cd)pyrene ND ua/L 0.10 1 01/07/17 13:27 01/10/17 18:19 193-39-5 01/07/17 13:27 01/10/17 18:19 91-57-6 2-Methylnaphthalene ND ua/L 0.10 1 01/07/17 13:27 01/10/17 18:19 91-20-3 Naphthalene ND ug/L 0.10 1 Phenanthrene 0.10 01/07/17 13:27 01/10/17 18:19 85-01-8 ND ug/L Pyrene ND ug/L 0.10 1 01/07/17 13:27 01/10/17 18:19 129-00-0 Surrogates 2-Fluorobiphenyl (S) %. 25-150 01/07/17 13:27 01/10/17 18:19 321-60-8 95 1 Terphenyl-d14 (S) 94 %. 25-150 1 01/07/17 13:27 01/10/17 18:19 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 8.2 ug/L 4.0 1 01/06/17 15:14 67-64-1 C9 Benzene ND ug/L 0.50 1 01/06/17 15:14 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/06/17 15:14 75-27-4 01/06/17 15:14 75-25-2 Bromoform ND ug/L 0.50 1 Bromomethane ND ug/L 0.50 1 01/06/17 15:14 74-83-9 01/06/17 15:14 78-93-3 2-Butanone (MEK) ND ug/L 2.0 1 Carbon disulfide 01/06/17 15:14 75-15-0 ND ug/L 1.0 1 L3 Carbon tetrachloride ND 0.50 1 01/06/17 15:14 56-23-5 ug/L Chlorobenzene ND 0.50 1 01/06/17 15:14 108-90-7 ug/L 01/06/17 15:14 75-00-3 Chloroethane ND ug/L 0.50 1 ND ug/L 0.50 01/06/17 15:14 67-66-3 Chloroform 1 Chloromethane 0.50 ND 01/06/17 15:14 74-87-3 ug/L 1 0.20 01/06/17 15:14 96-12-8 1.2-Dibromo-3-chloropropane ND ug/L 1 Dibromochloromethane ND ug/L 0.50 1 01/06/17 15:14 124-48-1 1,2-Dibromoethane (EDB) ND 1.0 01/06/17 15:14 106-93-4 ug/L 1 Dichlorodifluoromethane ND 1.0 01/06/17 15:14 75-71-8 ug/L 1 1,1-Dichloroethane ND 0.50 1 01/06/17 15:14 75-34-3 ug/L 1,2-Dichloroethane ND 0.50 1 01/06/17 15:14 107-06-2 ug/L 1,1-Dichloroethene ND ug/L 0.50 1 01/06/17 15:14 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/06/17 15:14 156-59-2 trans-1,2-Dichloroethene ND ug/L 0.50 1 01/06/17 15:14 156-60-5 1.2-Dichloropropane ND uq/L 0.50 01/06/17 15:14 78-87-5 cis-1,3-Dichloropropene 01/06/17 15:14 10061-01-5 ND ug/L 0.50 1 trans-1,3-Dichloropropene ND ug/L 0.50 1 01/06/17 15:14 10061-02-6 Ethylbenzene ND 0.50 01/06/17 15:14 100-41-4 ug/L 1 2-Hexanone ND ug/L 1.0 1 01/06/17 15:14 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 1 01/06/17 15:14 98-82-8 Methyl acetate ND ug/L 2.0 1 01/06/17 15:14 79-20-9 Methylene Chloride ND ug/L 0.50 1 01/06/17 15:14 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 01/06/17 15:14 108-10-1



ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

### Reservice Case Case Case Case Case Case Case Cas	Sample: MW-DP1	Lab ID: 2048198014		Collected: 01/04/	17 09:36	Received: 01	104h	CKN Water	
Methyl-leri-bulyl ether ND ug/L 0.50 1 0.1068/17 15:14 1634-04-4	Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Slyrene	8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
1,1,2,2-Testrachloroethane ND	Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 15:14	1634-04-4	
Tetrachloroshene	Styrene	ND	ug/L	1.0	1		01/06/17 15:14	100-42-5	
Tollene	1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 15:14	79-34-5	
1,1,1-Tritchicroelhane ND ug/L 0.50 1 0108/77 15:14 71-55-6 1,1,2-Tritchicroethane ND ug/L 0.50 1 0108/77 15:14 71-55-6 1,1,2-Tritchicroethane ND ug/L 0.50 1 0108/77 15:14 79-01-6 Tritchicroethane ND ug/L 0.50 1 0108/77 15:14 79-01-6 Tritchicroethane ND ug/L 0.50 1 0108/677 15:14 79-01-6 Tritchicroethane ND ug/L 0.50 1 0108/677 15:14 79-01-6 Tritchicroethane ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 15:14 75-69-4 Vinyl childred ND ug/L 0.50 1 0108/677 07-40 01/12/7 01:21 75-79-79-79-79-79-79-79-79-79-79-79-79-79-	Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 15:14	127-18-4	
1.1.2-Trichioroethane ND ug/L 0.50 1 0106/17 15 14 79-00-5 Trichioroethane ND ug/L 0.50 1 0106/17 15 14 79-00-5 Trichioroethane ND ug/L 0.50 1 0106/17 15 14 79-00-6 Trichioroethane ND ug/L 0.50 1 0106/17 15 14 79-69-4 Vinyl chloride ND ug/L 0.50 1 0106/17 15 14 79-69-4 Vinyl chloride ND ug/L 0.50 1 0106/17 15 14 79-69-4 Vinyl chloride ND ug/L 0.50 1 0106/17 15 14 79-69-4 Vinyl chloride ND ug/L 0.50 1 0106/17 15 14 79-69-4 Vinyl chloride ND ug/L 0.50 1 0106/17 15 14 79-69-14 1960123 1 0-Xylene ND ug/L 1.0 1 0106/17 15 14 1960123 1 0-Xylene ND ug/L 0.50 1 0106/17 15 14 1960123 1 0-Xylene ND ug/L 0.60 1 10 10 10 17 15 14 19-64-76 Surrogates Dibromofluoroemethane (S) 107 %. 72-126 1 0106/17 15 14 10 106/17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 17 15 14 10 10 10 10 17 15 14 10 10 10 10 17 15 14 10 10 10 10 17 15 14 10 10 10 10 17 15 14 10 10 10 10 10 10 10 10 10 10 10 10 10	Toluene	ND	ug/L	0.50	1		01/06/17 15:14	108-88-3	
Trichlorochene ND ug/L 0.50 1 01/06/17 15:14 79-01-6 Trichlorofluoromethane ND ug/L 0.50 1 01/06/17 15:14 75-01-4 Vinyl chloride ND ug/L 0.50 1 01/06/17 15:14 75-01-4 m&p-Xylene ND ug/L 2.0 1 01/06/17 15:14 179-01-6 Surrogates ND ug/L 2.0 1 01/06/17 15:14 169-47-6 Surrogates Dibromofluoromethane (S) 107 % 72-126 1 01/06/17 15:14 168-53-7 4-Bromofluoromethane (S) 98 % 68-124 1 01/06/17 15:14 168-53-7 4-Bromofluoromethane (S) 98 % 68-124 1 01/06/17 15:14 168-53-7 4-Bromofluorobenzene (S) 98 % 68-124 1 01/06/17 15:14 168-53-7 5ample: MW-MP2 Lab ID: 2048198015 Collected: 01/04/17 10:25 Received: 01/04/17 15:04 Mal/1x Water 8015M DRO/ORO O	1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	71-55-6	
Trichlorofluoromethane	1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	79-00-5	
Vinyl chloride ND ug/L 0.50 1 01/166/17 15:14 75-01-4 m&p-Xylene ND ug/L 2.0 1 01/06/17 15:14 75-01-2 c-Xylene ND ug/L 1.0 1 01/06/17 15:14 95-47-6 Surrogates Dibromofluoromethane (5) 107 % 72-126 1 01/06/17 15:14 1688-53-7 4-Bromofluorobenzene (S) 98 % 68-124 1 01/06/17 15:14 260-00-4 Toluene-d8 (S) 99 % 68-124 1 01/06/17 15:14 260-00-4 Sample: MW-MP2 Lab ID: 2048198015 Collected: 01/04/17 10:25 Received: 01/04/17 15:08 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8015M DRO/ORO Organics Analytical Method: EPA 80158 Modified Preparation Method: EPA 3535 Matrix: Water Prepared Analytical Method: EPA 801580 1 01/06/17 07:40 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21	Trichloroethene	ND	ug/L	0.50	1		01/06/17 15:14	79-01-6	
m&p-Xylene ND ug/L 2.0 1 01/06/17 15:14 79601-23-1 0-Xylene ND ug/L 1.0 1 01/06/17 15:14 95-47-6 8-	Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 15:14	75-69-4	
c-Xylene ND ug/L 1.0 1 01/06/17 15:14 95-47-6 Surrogates Dibromofluoromehane (S) 107 % 72-126 1 01/06/17 15:14 1868-53-7 4-Bromofluoromehane (S) 98 % 68-124 1 01/06/17 15:14 2037-26-5 Sample: MW-MP2 Lab ID: 2048198015 Collected: 01/04/17 10:25 Received: 01/04/17 15:08 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.25 1 01/06/17 07:40 01/12/17 01:21 01/06/17 07:40 01/12/17	Vinyl chloride	ND	ug/L	0.50	1		01/06/17 15:14	75-01-4	
Surrogates Dibromofiluromethane (S) 107 %. 72-126 1 01/06/17 15:14 1868-53-7 4-Bromofilurobenzene (S) 98 %. 68-124 1 01/06/17 15:14 460-00-4 Toiuene-d8 (S) 99 %. 68-124 1 01/06/17 15:14 460-00-4 Sample: MW-MP2 Lab ID: 2048198015 Collected: 01/04/17 10:25 Received: 01/04/17 15:08 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organics (C10-C28) ND mg/L 0.25 1 01/06/17 07 40 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21 01/12/17 01:21	m&p-Xylene	ND	ug/L	2.0	1		01/06/17 15:14	179601-23-1	
Dibromofluoromethane (S)		ND	ug/L	1.0	1		01/06/17 15:14	95-47-6	
4-Bromofluorobenzene (S) 98 %. 68-124 1 01/06/17 15:14 460-00-4 Toluene-d8 (S) 99 %. 79-119 1 01/06/17 15:14 460-00-4 2037-28-5 Sample: MW-MP2 Lab ID: 2048198015 Collected: 01/04/17 10:25 Received: 01/04/17 15:08 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.25 1 01/06/17 07:40 01/12/17 01:21 Surroyates n-Pentacosane (S) 24 %. 16-137 1 01/06/17 07:40 01/12/17 01:21 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Saurogates n-Pentacosane (S) 43 %. 10-121 1 01/06/17 07:40 01/12/17 01:21 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Analytical Method: EPA 8015/8021 Arsenic ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-38-2 Chromium 0.0013 mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-38-2 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-38-2 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-38-2 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 Lead ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:34 01/13/17 22:39 7440-47-3 ND mg/L 0.0010 1 01/09/17 15:34 01/13/17	**								
Toluene-d8 (S) 99 %. 79-119 1 01/06/17 15:14 2037-26-5	* *								
Sample: MW-MP2	` '								
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual	Toluene-d8 (S)	99	%.	79-119	1		01/06/17 15:14	2037-26-5	
### Reservice No. No	Sample: MW-MP2	Lab ID: 204	8198015	Collected: 01/04/	17 10:25	Received: 01	1/04/17 15:08 N	latrix: Water	
Diesel Range Organic (C10-C28) ND mg/L 0.25 1 01/06/17 07:40 01/12/17 01:21 Various (C28-C40) ND mg/L 0.50 1 01/06/17 07:40 01/12/17 01:21 Various (C28-C40) ND mg/L 0.50 1 01/06/17 07:40 01/12/17 01:21 Various (C28-C40) ND mg/L 0.50 1 01/06/17 07:40 01/12/17 01:21 029-99-2 O-Terphenyl (S) 43 % 10-121 1 01/06/17 07:40 01/12/17 01:21 029-99-2 O-Terphenyl (S) Analytical Method: EPA 8015/8021 Various (C18-C40) Various (C18-C	Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Oil Range Organics (>C28-C40) ND mg/L 0.50 1 01/06/17 07:40 01/12/17 01:21 Surrogates n-Pentacosane (S) 24 %. 16-137 1 01/06/17 07:40 01/12/17 01:21 629-99-2 o-Terphenyl (S) 43 %. 10-121 1 01/06/17 07:40 01/12/17 01:21 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 EPA 8015/8021 50.0 1 EPA 50.0 01/12/17 23:22 Value Gasoline Range Organics Surrogates ND ug/L 50.0 1 EPA 50.0 01/12/17 23:22 460-00-4 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 5010 EPA 5010 1 01/10/17 15:32 01/13/17 22:39 7440-38-2 Chromium 0.0013 mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 Lead ND mg/L 0.0050 1 01/09/17 15:32 01/13/17 22:39 7440-46-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 <	8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	aration M	lethod: EPA 3535	<u> </u>		
Oil Range Organics (>C28-C40) ND mg/L 0.50 1 01/06/17 07:40 01/12/17 01:21 Surrogates n-Pentacosane (S) 24 %. 16-137 1 01/06/17 07:40 01/12/17 01:21 629-99-2 o-Terphenyl (S) 43 %. 10-121 1 01/06/17 07:40 01/12/17 01:21 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 EPA 8015/8021 50.0 1 EPA 50.0 01/12/17 23:22 Value Gasoline Range Organics Surrogates ND ug/L 50.0 1 EPA 50.0 01/12/17 23:22 460-00-4 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 5010 EPA 5010 1 01/10/17 15:32 01/13/17 22:39 7440-38-2 Chromium 0.0013 mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 Lead ND mg/L 0.0050 1 01/09/17 15:32 01/13/17 22:39 7440-46-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 <	Diesel Range Organic (C10-C28)	ND	ma/l	0.25	1	01/06/17 07:40	01/12/17 01:21		
Surrogates n-Pentacosane (S) 24 %. 16-137 1 01/06/17 07:40 01/12/17 01:21 629-99-2 o-Terphenyl (S) 43 %. 10-121 1 01/06/17 07:40 01/12/17 01:21 629-99-2 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Casoline Range Organics ND ug/L 50.0 1	,		-						
n-Pentacosane (S) o-Terphenyl (S) 24 %. 16-137 1 01/06/17 07:40 01/12/17 01:21 629-99-2 o-Terphenyl (S) 43 %. 10-121 1 01/06/17 07:40 01/12/17 01:21 84-15-1 629-99-2 o-Terphenyl (S) 01/12/17 01:21 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Solo 1 1 01/06/17 07:40 01/12/17 01:21 84-15-1 84-15-1 Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) ND 89 %. 44-148 1 01/12/17 23:22 01/12/17 23:22 0460-00-4 01/12/17 23:22 0460-00-4 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 5000 Preparation Method: EP		113	9	0.00	'	01100/17 01.40	01/12/11 01.21		
co-Terphenyl (S) 43 %. 10-121 1 01/06/17 07:40 01/12/17 01:21 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 EPA 8015/8021 Sourceasts 01/12/17 23:22 01/12/17 23:22 Casoline Range Organics Surrogates ND ug/L 50.0 1 01/12/17 23:22 01/12/17 23:22 460-00-4 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 5010 Preparation Method: EPA 5010 01/10/17 15:32 01/13/17 22:39 7440-38-2 Arsenic Chromium ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 Lead ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Preparation Method: EPA 5020 Prep		24	%.	16-137	1	01/06/17 07:40	01/12/17 01:21	629-99-2	
South Companies South Comp		43	%.	10-121	1	01/06/17 07:40			
### A-Bromofluorobenzene (S) ### 89 ### 80	8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
4-Bromofluorobenzene (S) 89 %. 44-148 1 01/12/17 23:22 460-00-4 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 Arsenic ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-38-2 Chromium 0.0013 mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 Lead ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7439-92-1 Vanadium 0.012 mg/L 0.0050 1 01/09/17 15:32 01/13/17 22:39 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-38-2 Chromium, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-47-3 Lead, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-47-3 Lead, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7439-92-1		ND	ug/L	50.0	1		01/12/17 23:22		
Arsenic ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-38-2 Chromium 0.0013 mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 Lead ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7439-92-1 Vanadium 0.012 mg/L 0.0050 1 01/09/17 15:32 01/13/17 22:39 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-38-2 Chromium, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-47-3 Lead, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7439-92-1	-	89	%.	44-148	1		01/12/17 23:22	460-00-4	
Chromium 0.0013 mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 Lead ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7439-92-1 Vanadium 0.012 mg/L 0.0050 1 01/09/17 15:32 01/13/17 22:39 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 5005A EPA 5005A FRAME AND 10 10 10 10 10 10 10 10 10 10 10 10 10	6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EPA	A 3010			
Chromium 0.0013 mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7440-47-3 Lead ND mg/L 0.0010 1 01/09/17 15:32 01/13/17 22:39 7439-92-1 Vanadium 0.012 mg/L 0.0050 1 01/09/17 15:32 01/13/17 22:39 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 5005A EPA 5005A FRAME AND 10 10 10 10 10 10 10 10 10 10 10 10 10	Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:39	7440-38-2	
Lead ND vanadium mg/L vanadium 0.0010 vanadium 1 vanadium 0.012 vanadium 0.012 vanadium 0.0050 vanadium 1 vanadium 0.0050 vanadium 1 vanadium 0.0050 vanadium 1 vanadium 0.0050 vanadium 1 vanadium 0.0050 vanadium 1 vanadium 0.0050 vanadium	Chromium	0.0013		0.0010	1				
Vanadium 0.012 mg/L 0.0050 1 01/09/17 15:32 01/13/17 22:39 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-38-2 Chromium, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-47-3 Lead, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7439-92-1	Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:39	7439-92-1	
Arsenic, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-38-2 Chromium, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-47-3 Lead, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7439-92-1	Vanadium	0.012			1				
Chromium, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-47-3 Lead, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7439-92-1	6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EPA	A 3005A			
Chromium, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7440-47-3 Lead, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7439-92-1	Arsenic, Dissolved	ND	μα/l	1 በ	1	01/10/17 11:44	01/14/17 00:09	7440-38-2	
Lead, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/14/17 00:09 7439-92-1			-						
· · · · · · · · · · · · · · · · · · ·	•		-						
	Vanadium, Dissolved	10.8	ug/L	5.0	1				

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC Propertient Blvd - Suite F Rose, LA 70087 04)469-0333

St. Rose, LA 70087 (504)469-0333

Qual



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

7470 Mercury

Date: 01/18/2017 12:36 PM

2048198

Sample: MW-MP2 Lab ID: 2048198015 Parameters Results Units

Collected: 01/04/17 10:25

DF

Received

Prepared Report Limit Analytical Method: EPA 7470 Preparation Method: EPA 7470

ND 0.20 01/09/17 15:19 01/09/17 20:42 7439-97-6 Mercury ug/L

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved ND ug/L 0.20 01/10/17 12:30 01/10/17 17:38 7439-97-6

8270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 8270 t	by SIM Preparation	on Me	thod: EPA 3510		
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	208-96-8
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	207-08-9
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	206-44-0
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	85-01-8
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	88	% .	25-150	1	01/07/17 13:27	01/10/17 18:39	321-60-8
Terphenyl-d14 (S)	90	%.	25-150	1	01/07/17 13:27	01/10/17 18:39	1718-51-0
8260 MSV Low Level	Analytical Meth	od: EPA 5030E	3/8260		•		
Acetone	9.4	ug/L	4.0	1		01/06/17 15:32	67-64-1
Benzene	ND	ug/L	0.50	1		01/06/17 15:32	71-43-2
Bromodichloromethane	ND	ua/L	0.50	1		01/06/17 15:32	75-27-4

CECO IIIO I COII COII.	7 (1.d.) (1.d.) (1.d.) (1.d.) (1.d.)
Acatoma	0.4

2-Fluorobiphenyl (S)	88	%.	25-150	1	01/07/17 13:27	01/10/17 18:39	321-60-8
Terphenyl-d14 (S)	90	%.	25-150	1	01/07/17 13:27	01/10/17 18:39	1718-51-0
8260 MSV Low Level	Analytical Metho	d: EPA 5030B/8260			·		
Acetone	9.4	ug/L	4.0	1		01/06/17 15:32	67-64-1
Benzene	ND	ug/L	0.50	1		01/06/17 15:32	71-43-2
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 15:32	75-27-4
Bromoform	ND	ug/L	0.50	1		01/06/17 15:32	75-25-2
Bromomethane	ND	ug/L	0.50	1		01/06/17 15:32	74-83-9
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 15:32	78-93-3
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 15:32	75-15-0
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 15:32	56-23-5
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 15:32	108-90-7
Chloroethane	ND	ug/L	0.50	1		01/06/17 15:32	75-00-3
Chloroform	ND	ug/L	0.50	1		01/06/17 15:32	67-66-3
Chloromethane	ND	ug/L	0.50	1		01/06/17 15:32	74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 15:32	96-12-8
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 15:32	124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 15:32	106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 15:32	75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	75-34-3
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	107-06-2

REPORT OF LABORATORY ANALYSIS

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st. Rose, LA 70087



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

Diesel Range Organic (C10-C28)

Oil Range Organics (>C28-C40)

8021 GCV BTEX, MTBE, GRO

Gasoline Range Organics

4-Bromofluorobenzene (S)

Date: 01/18/2017 12:36 PM

Surrogates

Surrogates

n-Pentacosane (S)

o-Terphenyl (S)

ND

ND

21

36

ND

88

mg/L

mg/L

%.

%.

ug/L

0/2

Analytical Method: EPA 8015/8021

2048198

Sample: MW-MP2 Lab ID: 2048198015 Collected: 01/04/17 10:25 Received: **Parameters** Results Units Report Limit DF Prepared Qual Analytical Method: EPA 5030B/8260 8260 MSV Low Level ND 01/06/17 15:32 75-35-4 1,1-Dichloroethene 0.50 ug/L 1 01/06/17 15:32 156-59-2 ND 1 cis-1,2-Dichloroethene ug/L 1.0 01/06/17 15:32 156-60-5 trans-1,2-Dichloroethene ND 0.50 ug/L 1 01/06/17 15:32 78-87-5 0.50 1,2-Dichloropropane ND ug/L 1 01/06/17 15:32 10061-01-5 ND 0.50cis-1,3-Dichloropropene ug/L 1 trans-1,3-Dichloropropene NΩ 0.5001/06/17 15:32 10061-02-6 ug/L 1 Ethylbenzene NΩ 0.50 01/06/17 15:32 100-41-4 ug/L 1 2-Hexanone ND ug/L 1.0 1 01/06/17 15:32 591-78-6 01/06/17 15:32 98-82-8 Isopropylbenzene (Cumene) ND ua/L 1.0 1 ND ug/L 2.0 01/06/17 15:32 79-20-9 Methyl acetate 1 Methylene Chloride ND 0.50 01/06/17 15:32 75-09-2 ug/L 1 4-Methyl-2-pentanone (MIBK) ND 1.0 01/06/17 15:32 108-10-1 ug/L 1 01/06/17 15:32 1634-04-4 Methyl-tert-butyl ether ND ug/L 0.50 1 01/06/17 15:32 100-42-5 Styrene ND ug/L 1.0 7 1,1,2,2-Tetrachloroethane 01/06/17 15:32 79-34-5 ND ug/L 0.50 1 01/06/17 15:32 127-18-4 Tetrachloroethene ND ug/L 0.50 1 Toluene ND ug/L 0.50 1 01/06/17 15:32 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 1 01/06/17 15:32 71-55-6 1.1.2-Trichloroethane ND 0.50 01/06/17 15:32 79-00-5 ug/L 1 Trichloroethene ND 0.50 01/06/17 15:32 79-01-6 ug/L 1 Trichlorofluoromethane ND ug/L 0.50 01/06/17 15:32 75-69-4 1 Vinyl chloride ND ug/L 0.50 1 01/06/17 15:32 75-01-4 m&p-Xylene ND ug/L 2.0 1 01/06/17 15:32 179601-23-1 01/06/17 15:32 95-47-6 o-Xylene ND ug/L 1.0 1 Surrogates 108 01/06/17 15:32 1868-53-7 Dibromofluoromethane (S) %. 72-126 1 4-Bromofluorobenzene (S) 68-124 01/06/17 15:32 460-00-4 97 %. 1 Toluene-d8 (S) 100 79-119 01/06/17 15:32 2037-26-5 1 Lab ID: 2048198016 Sample: MW-MP3 Received: 01/04/17 15:08 Collected: 01/04/17 11:46 Matrix: Water Parameters Results Units DF Analyzed CAS No. Qual Report Limit Prepared 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

REPORT OF LABORATORY ANALYSIS

0.25

0.50

16-137

10-121

50.0

44-148

1

1

1

1

1

1

01/06/17 07:40 01/12/17 01:49

01/06/17 07:40 01/12/17 01:49

01/12/17 23:49

01/12/17 23:49 460-00-4

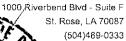
01/06/17 07:40 01/12/17 01:49 84-15-1



Date: 01/18/2017 12:36 PM

ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING Pace Project No.: 2048198 Sample: MW-MP3 Lab ID: 2048198016 Collected: 01/04/17 11:46 Parameters Results Units Report Limit Qual 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 0.0096 0.0010 01/09/17 15:32 01/13/17 22:43 7440-38-2 Arsenic ma/L 1 0.0036 0.0010 01/09/17 15:32 01/13/17 22:43 7440-47-3 Chromium mq/L 0.022 0.0010 01/09/17 15:32 01/13/17 22:43 7439-92-1 Lead mg/L 0.010 0.0050 Vanadium mg/L 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND 1.0 ug/L Chromium, Dissolved NΠ 01/10/17 11:44 01/14/17 00:13 7440-47-3 ug/L 1.0 01/10/17 11:44 01/14/17 00:13 7439-92-1 Lead, Dissolved NΩ ug/L 1.0 Vanadium, Dissolved 01/10/17 11:44 01/14/17 00:13 7440-62-2 ND 5.0 ug/L Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury Mercury ND 0.20 01/09/17 15:19 01/09/17 20:44 7439-97-6 ug/L 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury, Dissolved ND ug/L 0.20 01/10/17 12:30 01/10/17 17:45 7439-97-6 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene ND 0.10 ug/L Acenaphthylene ND ug/L 0.10 01/07/17 13:27 01/11/17 13:32 208-96-8 1 Anthracene ND ug/L 0.10 01/07/17 13:27 01/11/17 13:32 120-12-7 1 Benzo(a)anthracene ND ug/L 0.10 01/07/17 13:27 01/11/17 13:32 56-55-3 1 Benzo(a)pyrene ND ug/L 0.10 01/07/17 13:27 01/11/17 13:32 50-32-8 Benzo(b)fluoranthene ND ug/L 0.10 01/07/17 13:27 01/11/17 13:32 205-99-2 Benzo(g,h,i)perylene ND ug/L 0.10 01/07/17 13:27 01/11/17 13:32 191-24-2 Benzo(k)fluoranthene ND ug/L 0.10 01/07/17 13:27 01/11/17 13:32 207-08-9 Chrysene ND ug/L 0.10 01/07/17 13:27 01/11/17 13:32 218-01-9 Dibenz(a,h)anthracene ND ug/L 0.10 01/07/17 13:27 01/11/17 13:32 53-70-3 Fluoranthene 01/07/17 13:27 01/11/17 13:32 ND ug/L 0.10 1 206-44-0 01/07/17 13:27 01/11/17 13:32 Eluorene NΩ ug/L 0.10 1 86-73-7 Indeno(1,2,3-cd)pyrene NΩ 0.10 01/07/17 13:27 01/11/17 13:32 193-39-5 ug/L 1 2-Methylnaphthalene ND ug/L 0.1001/07/17 13:27 01/11/17 13:32 91-57-6 1 Naphthalene ND ug/L 0.10 1 01/07/17 13:27 01/11/17 13:32 91-20-3 Phenanthrene 01/07/17 13:27 01/11/17 13:32 85-01-8 ND ug/L 0.101 Pyrene ND ug/L 0.10 1 Surrogates 2-Fluorobiphenyl (S) 90 %. 25-150 1 01/07/17 13:27 01/11/17 13:32 321-60-8 Terphenyl-d14 (S) 82 %. 25-150 1 01/07/17 13:27 01/11/17 13:32 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 4.9 ug/L 4.0 01/06/17 15:50 67-64-1 C9 1 Benzene ND ug/L 0.50 1 01/06/17 15:50 71-43-2 Bromodichloromethane ND ua/L 0.50 1 01/06/17 15:50 75-27-4 Bromoform ND ua/L 0.50 1 01/06/17 15:50 75-25-2 Bromomethane ND ug/L 0.50 01/06/17 15:50 74-83-9 2-Butanone (MEK) ND ug/L 2.0 01/06/17 15:50 78-93-3





ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

Date: 01/18/2017 12:36 PM

2048198

Sample: MW-MP3	Lab ID: 20	48198016	Collected: 01/04/1	7 11:46	Received (//)4/4 14:09 (N	lain. Water	
Parameters	Results	Units	Report Limit	DF	Prepared Activities	CAS No.	Qual
8260 MSV Low Level	Analytical Me	thod: EPA 5	030B/8260				
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 15:50	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 15:50	56-23-5	
Chlorobenzene	ND	· ug/L	0.50	1	01/06/17 15:50	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 15:50	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 15:50	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 15:50	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 15:50	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 15:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 15:50	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 15:50	75-71-8	
1.1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 15:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 15:50		
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 15:50		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 15:50		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 15:50		
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 15:50		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 15:50		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 15:50		
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 15:50		
2-Hexanone	ND	ug/L	1.0	1	01/06/17 15:50		
Isopropylbenzene (Cumene)	ND ND	ug/L ug/L	1.0	1	01/06/17 15:50		
, , ,	ND ND		2.0	1	01/06/17 15:50		
Methylana Chlarida		ug/L	0.50	1			
Methylene Chloride	ND	ug/L	1.0	1	01/06/17 15:50		
4-Methyl-2-pentanone (MIBK)	ND ND	ug/L		1	01/06/17 15:50		
Methyl-tert-butyl ether		ug/L	0.50	1	01/06/17 15:50		
Styrene	ND	ug/L	1.0		01/06/17 15:50		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 15:50		
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 15:50		
Toluene	ND	ug/L	0.50	1	01/06/17 15:50		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 15:50		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 15:50		
Trichloroethene	ND	ug/L	0.50	1	01/06/17 15:50		
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 15:50		
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 15:50		
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 15:50		
o-Xylene	ND	ug/L	1.0	1	01/06/17 15:50	95-47-6	
Surrogates							
Dibromofluoromethane (S)	108	%.	72-126	1	01/06/17 15:50		
4-Bromofluorobenzene (S)	98	%.	68-124	1	01/06/17 15:50		
Toluene-d8 (S)	100	%.	79-119	1	01/06/17 15:50	2037-26-5	

SI. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

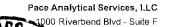
Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-MP8	Lab ID:	2048198017	Collected:	01/04/4	7 12-22	Receive	JOAN TEKNIA	Water	
Sample: WYY-WIFO	Lab ID:	ZU40130U1/	Collected:	01/04/1	1 13.33	N/4	THE TO		
Parameters	Results	Units	Repoi	rt Limít ——— -	DF	Prepared	Arbay	CAS No.	Qual
8015M DRO/ORO Organics	Analytical	Method: EPA 8	015B Modifie	ed Prepa	ration M	ethod: EPA 3535			
Diesel Range Organic (C10-C28)	NI	D mg/L		0.25	1	01/06/17 07:40	01/12/17 00:26		
Oil Range Organics (>C28-C40)	N	D mg/L		0.50	1	01/06/17 07:40	01/12/17 00:26		
Surrogates	_								
n-Pentacosane (S)		0 %.		16-137	1		01/12/17 00:26		
o-Terphenyl (S)	5	8 %.		10-121	1	01/06/17 07:40	01/12/17 00:26	84-15-1	
B021 GCV BTEX, MTBE, GRO	Analytical	Method: EPA 8	015/8021						
Gasoline Range Organics	NI	D ug/L		50.0	1		01/13/17 00:16		
Surrogates	0	2		44.440			04/40/47 00 40	100.00.4	
4-Bromofluorobenzene (S)	8	8 %.		44-148	1		01/13/17 00:16	460-00-4	
5020 MET ICPMS	Analytical	Method: EPA 6	020 Prepara	ition Metl	nod: EPA	3010			
Arsenic	0.001	9 mg/L		0.0010	1	01/09/17 15:32	01/13/17 22:55	7440-38-2	
Chromium	N	D mg/L		0.0010	1	01/09/17 15:32	01/13/17 22:55	7440-47-3	
Lead	N	D mg/L		0.0010	1		01/13/17 22:55		
Vanadium	N	D mg/L		0.0050	1	01/09/17 15:32	01/13/17 22:55	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical	Method: EPA 6	020 Prepara	ation Met	nod: EP/	4 3005A			
Arsenic, Dissolved	1.	3 ug/L		1.0	1	01/10/17 11:44	01/14/17 00:17	7440-38-2	
Chromium, Dissolved	Ni	_		1.0	1	01/10/17 11:44	01/14/17 00:17	7440-47-3	
Lead, Dissolved	N:	-		1.0	1	01/10/17 11:44	01/14/17 00:17	7439-92-1	
Vanadium, Dissolved	N	_		5.0	1	01/10/17 11:44	01/14/17 00:17	7440-62-2	
7470 Mercury	Analytical	Method: EPA 7	470 Prepara	ation Met	nod: EP/	4 7470			
Mercury	N	D ug/L		0.20	1	01/09/17 15:19	01/09/17 20:50	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical	Method: EPA 7	470 Prepara	ation Met	hod: EP/	4 7470			
Mercury, Dissolved	N	D ug/L		0.20	1	01/10/17 12:30	01/10/17 17:47	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical	Method: EPA 8	3270 by SIM	Preparat	ion Meth	nod: EPA 3510			
Acenaphthene	N	D ug/L		0.10	1	01/07/17 13:27	01/10/17 18:59	83-32-9	
Acenaphthylene	N	D ug/L		0.10	1	01/07/17 13:27	01/10/17 18:59	208-96-8	
Anthracene	N	D ug/L		0.10	1	01/07/17 13:27	01/10/17 18:59	120-12-7	
Benzo(a)anthracene	N	=		0.10	1	01/07/17 13:27	01/10/17 18:59	56-55-3	
Benzo(a)pyrene	N	-		0.10	1	01/07/17 13:27	01/10/17 18:59	50-32-8	
Benzo(b)fluoranthene	N	-		0.10	1	01/07/17 13:27	01/10/17 18:59	205-99-2	
Benzo(g,h,i)perylene	N	D ug/L		0.10	1	01/07/17 13:27	01/10/17 18:59	191-24-2	
Benzo(k)fluoranthene	N			0.10	1		01/10/17 18:59		
Chrysene		D ug/L		0.10	1		01/10/17 18:59		
Dibenz(a,h)anthracene		D ug/L		0.10	1		01/10/17 18:59		
Fluoranthene	N	· · · · · · · · · · · · · · · · · · ·		0.10	1		01/10/17 18:59		
Fluorene	N	-		0.10	1		01/10/17 18:59		
Indeno(1,2,3-cd)pyrene	N	-		0.10	1		01/10/17 18:59		
2-Methylnaphthalene	N	-		0.10	1		01/10/17 18:59		
Z-Metrymaphthalene Naphthalene	N			0.10	1		01/10/17 18:59		
•		•							
Phenanthrene	N	D ug/L		0.10	1	01/07/17 13:27	01/10/17 18:59	8-1 U-C0	



St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

m&p-Xylene

Date: 01/18/2017 12:36 PM

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Sample: MW-MP8	Lab ID: 2	2048198017	Collected: 01/04/	17 13:33	Received:	MODILIEE W	latux: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV PAH by SIM SEP	Analytical M	//ethod: EPA 8	270 by SiM Prepara	tion Meth	nod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	129-00-0	
Surrogates	70	0.4	05.450	4	04/07/47 40 07	04/40/47 40 50	004 00 0	
2-Fluorobiphenyl (S)	79		25-150	1		01/10/17 18:59		
Terphenyl-d14 (S)	85		25-150	1	01/07/17 13:27	01/10/17 18:59	1718-51-0	
8260 MSV Low Level	Analytical N	Nethod: EPA 50	030B/8260					
Acetone	8.3	-	4.0	1		01/06/17 16:07		C9
Benzene	ND	ug/L	0.50			01/06/17 16:07		
Bromodichloromethane	ND	J	0.50	1		01/06/17 16:07		
Bromaform	ND	Q	0.50	1		01/06/17 16:07		
Bromomethane	ND	J	0.50	1		01/06/17 16:07		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:07	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:07	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:07		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:07	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:07	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 16:07	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 16:07	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 16:07	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 16:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/Ļ	1.0	1		01/06/17 16:07	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 16:07	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:07	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:07	75-35-4	
cis-1,2-Dichloroethene	ND		1.0	1		01/06/17 16:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:07	156-60-5	
1,2-Dichloropropane	ND		0.50	1		01/06/17 16:07	78-87-5	
cis-1,3-Dichloropropene	ND		0.50	1		01/06/17 16:07	10061-01-5	
trans-1,3-Dichloropropene	ND		0.50	1		01/06/17 16:07	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 16:07	100-41-4	
2-Hexanone	ND		1.0	1		01/06/17 16:07	591-78-6	
Isopropylbenzene (Cumene)	ND	_	1.0	1		01/06/17 16:07	98-82-8	
Methyl acetate	ND		2.0	1		01/06/17 16:07	79-20-9	
Methylene Chloride	ND	•	0.50			01/06/17 16:07		
4-Methyl-2-pentanone (MIBK)	ND	9	1.0			01/06/17 16:07		
Methyl-tert-butyl ether	ND		0.50			01/06/17 16:07		
Styrene	ND	-	1,0			01/06/17 16:07		
1,1,2,2-Tetrachloroethane	ND	•	0.50			01/06/17 16:07		
Tetrachloroethene	ND	-	0.50			01/06/17 16:07		
Toluene	ND	-	0.50			01/06/17 16:07		
1,1,1-Trichloroethane	ND		0.50			01/06/17 16:07		
1.1.2-Trichloroethane	ND	-	0.50			01/06/17 16:07		
Trichloroethene	ND	-	0.50			01/06/17 16:07		
Trichlorofluoromethane	ND	-	0.50			01/06/17 16:07		
Vinyl chloride	ND ND	•	0.50			01/06/17 16:07		
mea Vylono	ND		ປຣ.ບ ກໍຕໍ			01/06/17 16:07		

REPORT OF LABORATORY ANALYSIS

2.0

ND

ug/L

01/06/17 16:07 179601-23-1



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-MP8	Lab ID: 204	8198017	Collected: 01/04/1	7 13:33	Received: 04/04/17 [5/08] Italy ter
Parameters	Results	Units	Report Limit	DF	Prepared Fayne AS No. Qual
8260 MSV Low Level	Analytical Met	nod: EPA 50	030B/8260		
o-Xylene <i>Surrogates</i>	ND	ug/L	1.0	1	01/06/17 16:07 95-47-6
Dibromofluoromethane (S)	107	%.	72-126	1	01/06/17 16:07 1868-53-7
4-Bromofluorobenzene (S)	98	%.	68-124	1	01/06/17 16:07 460-00-4
Toluene-d8 (S)	101	%.	79-119	1	01/06/17 16:07 2037-26-5

Sample: TB-010417-2	Lab ID: 204	8198018	Collected: 01/04/1	7 00:00	Received: 0	1/04/17 15:08 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/13/17 00:44		
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/13/17 00:44	460-00-4	
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Acetone	180	ug/L	4.0	1		01/06/17 16:25	67-64-1	
Benzene	ND	ug/L	0.50	1		01/06/17 16:25	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 16:25	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 16:25	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 16:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:25	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:25	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:25	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:25	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:25	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 16:25	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 16:25	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 16:25	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 16:25	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 16:25	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 16:25	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 16:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 16:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:25	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 16:25	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 16:25	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 16:25	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 16:25		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 16:25		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 16:25		



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: TB-010417-2 Lab ID: 2048198018 Collected: 01/04/17 00:00 Receive Parameters Results Prepared CAS No. Report Limit DF Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Methyl-tert-butyl ether ND ug/L 0.50 01/06/17 16:25 1634-04-4 Styrene ND 01/06/17 16:25 100-42-5 ug/L 1.0 1,1,2,2-Tetrachloroethane ND 0.50 01/06/17 16:25 79-34-5 ug/L Tetrachloroethene ND 0.50 01/06/17 16:25 127-18-4 ug/L Toluene ND ug/L 0.50 01/06/17 16:25 108-88-3 1,1,1-Trichloroethane ND 0.50 01/06/17 16:25 71-55-6 ug/L 1,1,2-Trichloroethane ND uq/L 0.50 01/06/17 16:25 79-00-5 Trichloroethene ND 0.50 01/06/17 16:25 79-01-6 ug/L Trichlorofluoromethane ND 0.50 01/06/17 16:25 75-69-4 ug/L Vinyl chloride ND ug/L 0.50 01/06/17 16:25 75-01-4 m&p-Xylene ND ug/L 2.0 01/06/17 16:25 179601-23-1 o-Xylene ND ug/L 1.0 01/06/17 16:25 95-47-6 Surrogates Dibromofluoromethane (S) 106 %. 72-126 1 01/06/17 16:25 1868-53-7 4-Bromofluorobenzene (S) 97 68-124 01/06/17 16:25 460-00-4 %. 1 Toluene-d8 (S) 100 79-119 01/06/17 16:25 2037-26-5 1

Sample: MW-NDP	Lab ID: 204	8198019	Collected: 01/04/1	7 14:2	2 Received: 01	/04/17 15 :08 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	115B Modified Prepa	ration	Method: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 00:53		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	0.50	1	01/06/17 07:40	01/12/17 00:53		
n-Pentacosane (S)	38	%.	16-137	1	01/06/17 07:40	01/12/17 00:53	629-99-2	
o-Terphenyl (S)	55	%.	10-121	1	01/06/17 07:40	01/12/17 00:53	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	15/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/13/17 01:11		
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/13/17 01:11	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: El	PA 3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:59	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:59	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:59	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:59	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Meth	nod: El	PA 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:29	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:29	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:29	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:29	7440-62-2	



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Sample: MW-NDP

Lab ID: 2048198019

Collected: 01/04/17 14:22

Parameters	Results	Units	Report Limit	DF	Prepare	COAraileta	CAS No.	Qual
7470 Mercury	Analytical Meth	od: EPA 747	0 Preparation Met	nod: EF	PA 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:52	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 747	0 Preparation Met	nod: EF	PA 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:49	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 827	0 by SIM Preparat	ion Me	lhod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/10/17 19:19		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	85-01-8	
Pyrene Surrogates	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	129-00-0	
2-Fluorobiphenyl (S)	77	%.	25-150	1	01/07/17 13:27	01/10/17 19:19	321_60_8	
Terphenyl-d14 (S)	78	%.	25-150	1		01/10/17 19:19		
8260 MSV Low Level	Analytical Meth				01/01/11 13.21	0 17 107 11 13.13	1110-51-0	
	,			4		04/06/47 46,40	07.04.4	60
Acetone	15.5	ug/L	4.0	1		01/06/17 16:43		C9
Benzene	ND	ug/L	0.50	1		01/06/17 16:43		
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 16:43		
Bromoform	ND	ug/L	0.50	1		01/06/17 16:43		
Bromomethane	ND	ug/L	0.50	1		01/06/17 16:43		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:43		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:43		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:43		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:43		
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:43		
Chloroform	ND	ug/L	0.50	1		01/06/17 16:43		
Chioromethane	ND	ug/L	0.50	1		01/06/17 16:43		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 16:43		
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 16:43		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 16:43		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 16:43		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:43		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:43	107-06-2	



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: MW-NDP Lab ID: 2048198019 Collected: 01/04/17 14:22 Water CAS No. Parameters Results Units Report Limit DF Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 1.1-Dichloroethene ND ug/L 0.50 1 01/06/17 16:43 75-35-4 cis-1.2-Dichloroethene ND ug/L 1.0 01/06/17 16:43 156-59-2 1 trans-1,2-Dichloroethene ND 0.50 01/06/17 16:43 156-60-5 ug/L 1 01/06/17 16:43 78-87-5 1,2-Dichloropropane ND 0.50 ug/L 1 cis-1,3-Dichloropropene ND 0.50 01/06/17 16:43 10061-01-5 ua/L trans-1,3-Dichloropropene 0.50 01/06/17 16:43 10061-02-6 ND ua/L Ethylbenzene 01/06/17 16:43 100-41-4 ND ug/L 0.50 2-Hexanone ND 01/06/17 16:43 591-78-6 ug/L 1.0 1 Isopropylbenzene (Cumene) ND 1.0 01/06/17 16:43 98-82-8 ug/L 1 Methyl acetate ND ug/L 2.0 1 01/06/17 16:43 79-20-9 Methylene Chloride ND ug/L 0.50 1 01/06/17 16:43 75-09-2 4-Methyl-2-pentanone (MIBK) ND 1.0 01/06/17 16:43 108-10-1 ug/L 1 Methyl-tert-butyl ether 2.5 ug/L 0.50 01/06/17 16:43 1634-04-4 Styrene ND ug/L 1.0 01/06/17 16:43 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 01/06/17 16:43 79-34-5 01/06/17 16:43 127-18-4 Tetrachloroethene ND ug/L 0.50 01/06/17 16:43 108-88-3 Toluene ND ug/L 0.50 1,1,1-Trichloroethane 0.50 01/06/17 16:43 71-55-6 ND ug/L 1,1,2-Trichloroethane ND 0.50 01/06/17 16:43 79-00-5 ug/L 1 01/06/17 16:43 79-01-6 Trichloroethene ND ug/L 0.50 1 Trichlorofluoromethane ND 0.50 01/06/17 16:43 75-69-4 ug/L 1 01/06/17 16:43 75-01-4 Vinyl chloride ND ug/L 0.5001/06/17 16:43 179601-23-1 m&p-Xylene ND ug/L 2.0 o-Xylene ND 01/06/17 16:43 95-47-6 ug/L 1.0 1 Surrogates 01/06/17 16:43 1868-53-7 Dibromofluoromethane (S) 106 %. 72-126 1 4-Bromofluorobenzene (S) 97 %. 68-124 1 01/06/17 16:43 460-00-4 Toluene-d8 (S) 01/06/17 16:43 2037-26-5 102 %. 79-119 1

Sample: FB-010417	Lab ID: 2048	3198020	Collected: 01/04/1	7 14:30	Received: 0	1/04/17 15:08 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/13/17 01:38		
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/13/17 01:38	460-00-4	
8260 MSV Low Level	Analytical Meth	od: EPA 50	30B/8260					
Acetone	17.3	ug/L	4.0	1		01/06/17 17:01	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 17:01	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 17:01	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 17:01	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 17:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 17:01	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 17:01	75-15-0	L3



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Sample: FB-010417	Lab ID: 204	8198020	Collected: 01/04/1	7 14:30	Received: 0	1/04/17 15:08 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260	٠				
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 17:01	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 17:01	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 17:01	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 17:01	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 17:01	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 17:01	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 17:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 17:01	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 17:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 17:01		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 17:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 17:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 17:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 17:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 17:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 17:01		
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 17:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 17:01		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 17:01	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 17:01		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 17:01		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 17:01		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 17:01	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 17:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 17:01		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 17:01		
Toluene	ND	ug/L	0.50	1		01/06/17 17:01		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 17:01		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 17:01		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 17:01		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 17:01		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 17:01		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 17:01		
o-Xylene	ND	ug/L	1.0	1		01/06/17 17:01		
Surrogates	ND	ugre	1.0	•		3 1100/17 17:01	32 0	
Dibromofluoromethane (S)	104	%.	72-126	1		01/06/17 17:01	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 17:01		
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 17:01		

REPORT OF LABORATORY ANALYSIS

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Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

QC Batch:

71479

Analysis Method:

EPA 8015/8021

QC Batch Method:

EPA 8015/8021

Analysis Description:

8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples:

2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

2048198017, 2048198018, 2048198019, 2048198020

METHOD BLANK: 298998

Matrix: Water

Associated Lab Samples:

2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

2048198017, 2048198018, 2048198019, 2048198020

Reporting Blank Parameter Units Result Limit Analyzed Qualifiers Gasoline Range Organics ug/L ND 50.0 01/06/17 17:15 4-Bromofluorobenzene (S) %. 86 44-148 01/06/17 17:15

METHOD BLANK: 301228

Matrix: Water

Associated Lab Samples:

Date: 01/18/2017 12:36 PM

2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

2048198017, 2048198018, 2048198019, 2048198020

Blank Reporting Parameter Units Result Limit Qualifiers Analyzed Gasoline Range Organics ND ug/L 50.0 01/12/17 16:49 4-Bromofluorobenzene (S) %. 87 44-148 01/12/17 16:49

LABORATORY CONTROL SAMPLE: 298999 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Gasoline Range Organics ug/L 440 88 500 61-136 4-Bromofluorobenzene (S) 91 44-148 %.

LABORATORY CONTROL SAMPLE: 301229 LCS Spike LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Gasoline Range Organics ug/L 500 436 87 61-136 4-Bromofluorobenzene (S) %. 93 44-148

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299000 299001 MS MSD 2048198006 Spike Spike MS MSD MSD MS % Rec Max Parameter Units Conc. Conc. Result Result Result % Rec % Rec RPD RPD Limits Qual Gasoline Range Organics ug/L ND 500 500 432 430 79 79 15-147 1 20 4-Bromofluorobenzene (S) %. 90 44-148

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

QC Batch:

71616

Analysis Method:

EPA 7470

QC Batch Method: EPA 7470

Associated Lab Samples:

Analysis Description: 7470 Mercury

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299680

Matrix: Water

Associated Lab Samples:

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Blank

Result

Reporting

Limit

Analyzed

Qualifiers

Mercury

Units ug/L

ND

0.20 01/09/17 20:07

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

Parameter

299681

Units

ug/L

Spike

LCS

LCS % Rec % Rec Limits

Qualifiers

Mercury

Units ug/L

Conc. 1

MS

Result

105

80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

299682

1.0

299683

% Rec

MSD

Max

MSD Spike

MS

MSD

MS % Rec

RPD RPD

Qual 20 M1

Mercury

2048198006 Result

ND

Spike Conc. Conc. 1

Result

Result 0.63 0.63

63

% Rec Limits

75-125

Date: 01/18/2017 12:36 PM



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

QC Batch:

71675

Analysis Method:

EPA 7470

QC Batch Method: Associated Lab Samples:

EPA 7470 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

Analysis Description:

7470 Mercury Dissolved

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Matrix: Water

METHOD BLANK: 299988 Associated Lab Samples:

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Blank Result

Reporting Limit

Qualifiers Analyzed

Mercury, Dissolved

Units ug/L

ND

01/10/17 16:51 0.20

LABORATORY CONTROL SAMPLE: 299989

Parameter

Parameter

Units

ug/L

Spike Conc. LCS

LCS % Rec % Rec Limits

Mercury, Dissolved

Units ug/L

Result

1

Result 1.1

108

80-120

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

ND

MSD

MSD

MS

70

MSD

67

RPD

Max

Parameter Mercury, Dissolved

2048198006 Spike Conc.

MS

Spike Conc.

MS Result

0.73

299991

% Rec Result 0.70

% Rec

% Rec Limits 75-125

RPD Qual

20 M1

Date: 01/18/2017 12:36 PM



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

QC Batch:

71620

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3010

Analysis Description:

6020 MET

Associated Lab Samples:

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299696

Matrix: Water

Associated Lab Samples:

Date: 01/18/2017 12:36 PM

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/13/17 19:07	
Chromium	mg/L	ND	0.0010	01/13/17 19:07	
Lead	mg/L	ND	0.0010	01/13/17 19:07	
Vanadium	mg/L	ND	0.0050	01/13/17 19:07	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	100	85-115	
Lead	mg/L	.02	0.019	97	84-115	
Vanadium	mg/L	.02	0.020	100	81-115	

MATRIX SPIKE & MATRIX SF	PIKE DUPLIC	CATE: 29969	8		299699							
Parameter	Units	2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	RPD	Max RPD	Qual
Arsenic	 	0.0052	.02	.02	0.024	0.024	94	93	80-120		20	
Chromium	mg/L	ND	.02	.02	0.020	0.020	95	93	80-120	1	20	
Lead	mg/L	ND	.02	.02	0.021	0.021	105	104	80-120	1	20	
Vanadium	mg/L	ND	.02	.02	0.018	0.017	88	85	80-120	3	20	



Project:

PUMA TERMINAL MW-SAMPLING

300005

ug/L

Units

ug/L

ug/L

ug/L

NΩ

Pace Project No.:

2048198

QC Batch:

71681 EPA 3005A Analysis Method:

EPA 6020

LCS

% Rec

102

100

96

17.3

% Rec

Limits

87

80-120

80-120

80-120

Qualifiers

75-125

QC Batch Method:

Analysis Description:

6020 MET Dissolved

Associated Lab Samples:

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 300004

Arsenic, Dissolved

Lead, Dissolved

Chromium, Dissolved

Vanadium, Dissolved

Date: 01/18/2017 12:36 PM

Matrix: Water

Associated Lab Samples:

LABORATORY CONTROL SAMPLE:

Parameter

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Chromium, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Lead, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Vanadium, Dissolved	ug/L	ND	5.0	01/13/17 19:22	

Spike

Conc.

20

20

20

20

Vanadium, Dissolved		ug/L	20)	20.2	101	80	-120				
MATRIX SPIKE & MATRIX S	SPIKE DUPLIC	CATE: 30000	 6		300007							
		2048198006	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic, Dissolved	ug/L	1.6	20	20	20.7	20.5	96	95	75-125	1	20	
Chromium, Dissolved	ug/L	ND	20	20	18.7	18.6	93	93	75-125	0	20	
Lead, Dissolved	ug/L	ND	20	20	20.7	20.8	104	104	75-125	0	20	

20

17.3

LCS

Result

20.3

19.9

19.3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

20



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

QC Batch:

71490

Analysis Method:

EPA 5030B/8260

QC Batch Method:

EPA 5030B/8260

Analysis Description:

8260 MSV Low Level

Associated Lab Samples:

2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

2048198017, 2048198018, 2048198019, 2048198020

METHOD BLANK: 299028

Date: 01/18/2017 12:36 PM

Matrix: Water

Associated Lab Samples:

2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,

Reporting

2048198017, 2048198018, 2048198019, 2048198020

Blank

Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	 ug/L	ND -	0.50	01/06/17 09:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1.2-Trichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1-Dichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1-Dichloroethene	ug/L	ND	0.50	01/06/17 09:55	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/06/17 09:55	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/06/17 09:55	
1,2-Dichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,2-Dichloropropane	ug/L	ND	0.50	01/06/17 09:55	
2-Butanone (MEK)	ug/L	ND	2.0	01/06/17 09:55	
2-Hexanone	ug/L	ND	1.0	01/06/17 09:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/06/17 09:55	
Acetone	ug/L	ND	4.0	01/06/17 09:55	
Benzene	ug/L	ND	0.50	01/06/17 09:55	
Bromodichloromethane	ug/L	ND	0.50	01/06/17 09:55	
Bromoform	ug/L	ND	0.50	01/06/17 09:55	
Bromomethane	ug/L	ND	0.50	01/06/17 09:55	
Carbon disulfide	ug/L	ND	1.0	01/06/17 09:55	
Carbon tetrachloride	ug/L	ND	0.50	01/06/17 09:55	
Chlorobenzene	ug/L	ND	0.50	01/06/17 09:55	
Chloroethane	ug/L	ND	0.50	01/06/17 09:55	
Chloroform	ug/L	ND	0.50	01/06/17 09:55	
Chloromethane	ug/L	ND	0.50	01/06/17 09:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/06/17 09:55	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/06/17 09:55	
Dibromochloromethane	ug/L	ND	0.50	01/06/17 09:55	
Dichlorodifluoromethane	ug/L	ND	1.0	01/06/17 09:55	
Ethylbenzene	ug/L	ND	0.50	01/06/17 09:55	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/06/17 09:55	
m&p-Xylene	ug/L	ND	2.0	01/06/17 09:55	
Methyl acetate	ug/L	ND	2.0	01/06/17 09:55	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/06/17 09:55	
Methylene Chloride	ug/L	ND	0.50	01/06/17 09:55	
o-Xylene	ug/L	ND	1.0	01/06/17 09:55	
Styrene	ug/L	ND	1.0	01/06/17 09:55	
Tetrachloroethene	ug/L	ND	0.50	01/06/17 09:55	
Toluene	ug/L	ND	0.50	01/06/17 09:55	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/06/17 09:55	

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Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

METHOD BLANK: 299028

Date: 01/18/2017 12:36 PM

Matrix: Water

Associated Lab Samples:

2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198018, 2048198019, 2048198020

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
trans-1,3-Dichloropropene	ug/L	ND .	0.50	01/06/17 09:55	
Trichloroethene	ug/L	ND	0.50	01/06/17 09:55	
Trichlorofluoromethane	ug/L	ND	0.50	01/06/17 09:55	
Vinyl chloride	ug/L	ND	0.50	01/06/17 09:55	
4-Bromofluorobenzene (S)	%.	99	68-124	01/06/17 09:55	
Dibromofluoromethane (S)	%.	102	72-126	01/06/17 09:55	
Toluene-d8 (S)	%.	100	79-119	01/06/17 09:55	

LABORATORY CONTROL SAMPLE:	299029					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.5	107	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	47.7	95	15-179	
1,1,2-Trìchloroethane	ug/L	50	45.1	90	58-144	
1,1-Dichloroethane	ug/L	50	54.4	109	63-129	
1,1-Dichloroethene	ug/L	50	53.0	106	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	43.8	88	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.7	93	52-161	
1,2-Dichloroethane	ug/L	50	46.5	93	57-148	
1,2-Dichloropropane	ug/L	50	49.8	100	66-128	
2-Butanone (MEK)	ug/L	50	50.1	100	32-183	
2-Hexanone	ug/L	50	44.5	89	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.0	90	26-171	
Acetone	ug/L	50	51.5	103	22-165	
Benzene	ug/L	50	52.1	104	62-131	
Bromodichloromethane	ug/L	50	44.3	89	69-132	
Bromoform	ug/L	50	40.1	80	35-166	
Bromomethane	ug/L	50	44.9	90	34-158	
Carbon disulfide	ug/L	50	65.9	132	31-128 I	_0
Carbon tetrachloride	ug/L	50	48.9	98	54-144	
Chlorobenzene	ug/L	50	48.0	96	70-127	
Chloroethane	ug/L	50	40.5	81	17-195	
Chloroform	ug/L	50	48.4	97	73-134	
Chloromethane	ug/L	50	53.3	107	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.3	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	49.0	98	72-138	
Dibromochloromethane	ug/L	50	43.6	87	49-146	
Dichtorodifluoromethane	ug/L	50	50.0	100	10-179	
Ethylbenzene	ug/L	50	47.2	94	66-126	
Isopropylbenzene (Cumene)	ug/L	50	49.1	98	51-138	
m&p-Xylene	ug/L	100	95.7	96	65-129	
Methyl acetate	ug/L	50	50.4	101	20-142	

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Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

LABORATORY CONTROL SAMPLE:	299029					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	48.2	96	37-166	
Methylene Chloride	ug/L	50	53.5	107	46-168	
o-Xylene	ug/L	50	47.3	95	65-124	
Styrene	ug/L	50	47.7	95	72-133	
Tetrachloroethene	ug/L	50	48.5	97	46-157	
foluene	ug/L	50	49.8	100	69-126	
rans-1,2-Dichloroethene	ug/L	50	54.0	108	60-129	
rans-1,3-Dichloropropene	ug/L	50	46.9	94	59-149	
richloroethene	ug/L	50	50.8	102	67-132	
Frichlorofluoromethane	ug/L	50	52.2	104	39-171	
inyl chloride	ug/L	50	42.2	84	27-149	
-Bromofluorobenzene (S)	%.			99	68-124	
Dibromofluoromethane (S)	%.			108	72-126	
oluene-d8 (S)	%.			100	79-119	

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	ATE: 29903	0		299031							
			MS	MSD								
5		2048198006	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	_
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	61.6	54.6	123	109	54-137	12	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	53.8	47.9	108	96	15-187	12	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	48.7	44.3	97	89	59-148	10	20	
1,1-Dichloroethane	ug/L	ND	50	50	59.8	53.7	120	107	59-133	11	20	
1,1-Dichloroethene	ug/L	ND	50	50	62.2	53.2	124	106	44-146	15	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	50.0	46.0	100	92	23-166	8	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	51.4	46.4	103	93	55-166	10	20	
1,2-Dichloroethane	ug/L	ND	50	50	50.9	45.9	102	92	56-154	10	20	
1,2-Dichloropropane	ug/L	ND	50	50	56.3	49.8	113	100	62-135	12	20	
2-Butanone (MEK)	ug/L	ND	50	50	54.6	51.2	109	102	20-205	6	20	
2-Hexanone	ug/L	ND	50	50	47.0	45.0	94	90	25-189	4	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	49.5	47.0	99	94	23-184	5	20	
Acetone	ug/L	39.4	50	50	65.5	59.7	52	41	11-217	9	20	
Benzene	ug/L	ND	50	50	60.1	53.0	120	106	52-141	12	20	
Bromodichloromethane	ug/L	ND	50	50	49.9	44.7	100	89	70-134	11	20	
Bromoform	ug/L	ND	50	50	44.1	40.9	88	82	37-171	8	20	
Bromomethane	ug/L	ND	50	50	50.0	46.8	100	94	34-155	7	20	
Carbon disulfide	ug/L	ND	50	50	81.5	68.4	163	136	28-130	18	20	MO
Carbon tetrachloride	ug/L	ND	50	50	56.5	49.9	113	100	48-146	12	20	
Chlorobenzene	ug/L	ND	50	50	55.2	49.6	110	99	67-129	11	20	
Chloroethane	ug/L	ND	50	50	47.0	41.6	94	83	12-192	12	20	
Chloroform	ug/L	ND	50	50	54.2	47.7	108	95	66-143	13	20	
Chloromethane	ug/L	ND	50	50	60.3	54.3	121	109	14-155	11	20	
cis-1,2-Dichloroethene	⊔g/L	ND	50	50	58.8	51.7	118	103	56-141	13	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	53.8	48.4	108	97	70-139	11	20	

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REPORT OF LABORATORY ANALYSIS

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Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

Date: 01/18/2017 12:36 PM

2048198

MATRIX SPIKE & MATRIX SPIR	KE DUPLK	CATE: 299030	D		299031							
			MS	M\$D								
		2048198006	Spike	Spike	MŞ	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Dibromochloromethane	ug/L	ND	50	50	47.7	43.4	95	87	50-150	9	20	
Dichlorodifluoromethane	ug/L	ND	50	50	58.1	51.6	116	103	10-173	12	20	
Ethylbenzene	ug/L	ND	50	50	53.4	48.8	107	98	57-135	9	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	56.5	52.1	113	104	40-146	8	20	
m&p-Xylene	ug/L	ND	100	100	109	98.4	109	98	56-136	10	20	
Methyl acetate	ug/L	ND	50	50	51.9	47.9	104	96	10-142	8	20	
Methyl-tert-butyl ether	ug/L	8.2	50	50	62.0	56.3	108	96	35-176	10	20	
Methylene Chloride	ug/L	ND	50	50	57.9	53.1	116	106	45-166	9	20	
o-Xylene	ug/L	ND	50	50	52.8	47.7	106	95	57-133	10	20	
Styrene	ug/L	ND	50	50	54.1	48.6	108	97	58-144	11	20	
Tetrachloroethene	ug/L	ND	50	50	56.5	51.3	113	103	48-143	10	20	
Toluene	ug/L	ND	50	50	56.8	50.2	114	100	59-136	12	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	62.1	53.8	124	108	57-132	14	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	53.5	48.0	107	96	59-154	11	20	
Trichloroethene	ug/L	ND	50	50	58.3	51.9	117	104	58-140	12	20	
Trichlorofluoromethane	ug/L	ND	50	50	62.3	55.7	125	111	24-175	11	20	
Vinyl chloride	ug/L	ND	50	50	49.5	43.0	99	86	21-150	14	20	
4-Bromofluorobenzene (S)	%.						101	98	68-124			
Dibromofluoromethane (S)	%.						107	106	72-126			
Toluene-d8 (S)	%.						102	101	79-119			



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

QC Batch:

71486

Analysis Method:

EPA 8015B Modified

QC Batch Method:

EPA 3535

EPA 8015 ORO

Associated Lab Samples:

Analysis Description: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299020

Matrix: Water

Associated Lab Samples:

Date: 01/18/2017 12:36 PM

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198019, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/11/17 16:31	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/11/17 16:31	
n-Pentacosane (S)	%.	38	16-137	01/11/17 16:31	
o-Terphenyl (S)	%.	56	10-121	01/11/17 16:31	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.21J	54	10-115	
n-Pentacosane (S)	%.			47	16-137	
o-Terphenyl (S)	%.			66	10-121	
MATRIX SPIKE & MATRIX SPIKE DU	PLICATE: 2990		29902			

Parameter	Units	2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	N RPD F	Max RPD	Qual
Diesel Range Organic (C10- C28)	mg/L	ND	.4	.4	0.47	0.57	70	93	10-122	18	20	
n-Pentacosane (S)	%.						64	71	16-137			
o-Terphenyl (S)	%.						73	81	10-121			



Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

QC Batch:

71484

Analysis Method:

EPA 8270 by SIM

QC Batch Method:

EPA 3510

Analysis Description:

8270 Water by SIM MSSV

Associated Lab Samples:

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010

METHOD BLANK: 299014

Matrix: Water

Associated Lab Samples:

Date: 01/18/2017 12:36 PM

2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,

2048198010

Parameter	Units	Blan k Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/09/17 12:22	
Acenaphthene	ug/L	ND	0.10	01/09/17 12:22	
Acenaphthylene	ug/L	ND	0.10	01/09/17 12:22	
Anthracene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(a)anthracene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(a)pyrene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Chrysene	ug/L	ND	0.10	01/09/17 12:22	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/09/17 12:22	
-luoranthene	ug/L	ND	0.10	01/09/17 12:22	
Fluorene	ug/L	ND	0.10	01/09/17 12:22	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/09/17 12:22	
Naphthalene	ug/L	ND	0.10	01/09/17 12:22	
Phenanthrene	ug/L	ND	0.10	01/09/17 12:22	
Pyrene	ug/L	ND	0.10	01/09/17 12:22	
2-Fluorobiphenyl (S)	%.	70	25-150	01/09/17 12:22	
Terphenyl-d14 (S)	%.	73	25-150	01/09/17 12:22	

LABORATORY CONTROL SAMPLE:	299015					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L		2.7	68	35-150	
Acenaphthene	ug/L	4	2.9	72	35-150	
Acenaphthylene	ug/L	4	2.8	71	35-150	
Anthracene	ug/L	4	3.6	89	35-150	
Benzo(a)anthracene	ug/L	4	3.1	79	35-150	
Benzo(a)pyrene	ug/L	4	2.9	72	35-150	
Benzo(b)fluoranthene	ug/L	4	2.9	74	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.2	81	35-150	
Benzo(k)fluoranthene	ug/L	4	2.9	72	35-150	
Chrysene	ug/L	4	2.9	72	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.6	90	35-150	
Fluoranthene	ug/L	4	2.9	72	35-150	
Fluorene	ug/L	4	2.8	71	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.4	86	35-150	
Naphthalene	ug/L	4	2.5	62	35-150	

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Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

Date: 01/18/2017 12:36 PM

2048198

LABORATORY CONTROL SA	AMPLE: 29	99015										
			Spike	LCS		LCS	% Rec					
Parameter		Units	Conc.	Resu	lt	% Rec	Limits	Qı	ualifiers			
Phenanthrene		ug/L	4		3.1	78	35-	150				
Pyrene		ug/L	4		2.8	69	35-	150				
2-Fluorobiphenyl (S)		%.				73	25-	150				
Terphenyl-d14 (S)		%.				77	25-	150				
MATRIX SPIKE & MATRIX SI	PIKE DUPLIC	CATE: 29901			299017							
•			MS	MSD								
		2048198006	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
2-Methylnaphthalene	ug/L	ND	4	4	3.4	2,7	84	66	35-150	24	20	R1
Acenaphthene	ug/L	0.27	4	4	3.5	2.9	82	65	35-150	21	20	R1
Acenaphthylene	ug/L	ND	4	4	3.4	2.7	84	66	35-150	23	20	R1
Anthracene	ug/L	0.11	4	4	4.0	3.1	97	75	35-150	24	20	R1
Benzo(a)anthracene	ug/L	ND	4	4	3.6	2.8	89	71	35-150	22	20	R1
Benzo(a)pyrene	ug/L	ND	4	4	3.2	2.5	79	62	35-150	24	20	R1
Benzo(b)fluoranthene	ug/L	ND	4	4	3.1	2.5	78	64	35-150	21	20	R1
Benzo(g,h,i)perylene	ug/L	ND	4	4	3.6	3.0	90	74	35-150	20	20	ı
Benzo(k)fluoranthene	ug/L	ND	4	4	3.1	2.5	79	61	35-150	25	20	R1
Chrysene	ug/L	ND	4	4	3.2	2.5	80	63	35-150	24	20	R1
Dibenz(a,h)anthracene	ug/L	ND	4	4	3.8	3.1	95	79	35-150	18	20	•
Fluoranthene	ug/L	ND	4	4	3.2	2.6	80	64	35-150	22	20) R1
Fluorene	ug/L	ND	4	4	3.4	2.7	84	67	35-150	23	20	R1
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	3.7	3.1	92	76	35-150	19	20	ı
Naphthalene	ug/L	ND	4	4	3.0	2.4	74	58	35-150	24	20	R1
Phenanthrene	ug/L	0.26	4	4	3.6	2.8	83	65	35-150	22	20	R1
Pyrene	ug/L	ND	4	4	3.2	2.4	79	61	35-150	26	20) R1
2-Fluorobiphenyl (S)	%.						83	70	25-150		20)
Terphenyl-d14 (S)	%.						84	68	25-150		20	J



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

2048198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2048198002	EB-010317	EPA 3535	71486	EPA 8015B Modified	71841
2048198003	MW-B9	EPA 3535	71486	EPA 8015B Modified	71841
048198004	MW-EB103	EPA 3535	71486	EPA 8015B Modified	71841
048198005	MW-EB104	EPA 3535	71486	EPA 8015B Modified	71841
048198006	MW-EB105	EPA 3535	71486	EPA 8015B Modified	71841
048198007	DUP004	EPA 3535	71486	EPA 8015B Modified	71841
048198008	MW-EB106	EPA 3535	71486	EPA 8015B Modified	71841
048198009	MW-EB107	EPA 3535	71486	EPA 8015B Modified	71841
048198010	MW-EB108	EPA 3535	71486	EPA 8015B Modified	71841
048198013	EB-010417	EPA 3535	71486	EPA 8015B Modified	71841
048198014	MW-DP1	EPA 3535	71486	EPA 8015B Modified	71841
048198015	MW-MP2	EPA 3535	71486	EPA 8015B Modified	71841
048198016	MW-MP3	EPA 3535	71486	EPA 8015B Modified	71841
048198017	MW-MP8	EPA 3535	71486	EPA 8015B Modified	71841
048198019	MW-NDP	EPA 3535	71486	EPA 8015B Modified	71841
048198001	TB-010317	EPA 8015/8021	71479		
048198002	EB-010317	EPA 8015/8021	71479		
048198003	MW-B9	EPA 8015/8021	71479		
048198004	MW-EB103	EPA 8015/8021	71479		
048198005	MW-EB104	EPA 8015/8021	71479		
048198006	MW-EB105	EPA 8015/8021	71479		
048198007	DUP004	EPA 8015/8021	71479		
048198008	MW-EB106	EPA 8015/8021	71479		
048198009	MW-EB107	EPA 8015/8021	71479		
048198010	MW-EB108	EPA 8015/8021	71479		
048198011	FB-010317	EPA 8015/8021	71479		
048198012	TB-010417	EPA 8015/8021	71479		
048198013	EB-010417	EPA 8015/8021	71479		
048198014	MW-DP1	EPA 8015/8021	71479		
048198015	MW-MP2	EPA 8015/8021	71479		
048198016	MW-MP3	EPA 8015/8021	71479		
048198017	MW-MP8	EPA 8015/8021	71479		
048198018	TB-010417-2	EPA 8015/8021	71479		
2048198019	MW-NDP	EPA 8015/8021	71479		
2048198020	FB-010417	EPA 8015/8021	71479		
048198002	EB-010317	EPA 3010	71620	EPA 6020	71657
2048198003	MW-B9	EPA 3010	71620	EPA 6020	71657
048198004	MW-EB103	EPA 3010	71620	EPA 6020	71657
048198005	MW-EB104	EPA 3010	71620	EPA 6020	71657
048198006	MW-EB105	EPA 3010	71620	EPA 6020	71657
048198007	DUP004	EPA 3010	71620	EPA 6020	71657
048198008	MW-EB106	EPA 3010	71620	EPA 6020	71657
048198009	MW-EB107	EPA 3010	71620	EPA 6020	71657
048198010	MW-EB108	EPA 3010	71620	EPA 6020	71657
048198013	EB-010417	EPA 3010	71620	EPA 6020	71657
048198014	MW-DP1	EPA 3010	71620	EPA 6020	71657
048198015	MW-MP2	EPA 3010	71620	EPA 6020	71657
2048198016	MW-MP3	EPA 3010	71620	EPA 6020	71657



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.:

Date: 01/18/2017 12:36 PM

2048198

_ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
048198017	MW-MP8	EPA 3010	71620	EPA 6020	71657
048198019	MW-NDP	EPA 3010	71620	EPA 6020	71657
048198002	EB-010317	EPA 3005A	71681	EPA 6020	71750
048198003	MW-B9	EPA 3005A	71681	EPA 6020	71750
048198004	MW-EB103	EPA 3005A	71681	EPA 6020	71750
048198005	MW-EB104	EPA 3005A	71681	EPA 6020	71750
048198006	MW-EB105	EPA 3005A	71681	EPA 6020	71750
048198007	DUP004	EPA 3005A	71681	EPA 6020	71750
048198008	MW-EB106	EPA 3005A	71681	EPA 6020	71750
048198009	MW-EB107	EPA 3005A	71681	EPA 6020	71750
048198010	MW-EB108	EPA 3005A	71681	EPA 6020	71750
			71681		71750
048198013	EB-010417 MW-DP1	EPA 3005A	71681	EPA 6020	71750
048198014 048198015	MW-MP2	EPA 3005A EPA 3005A	71681	EPA 6020 EPA 6020	71750 71750
	MW-MP3			EPA 6020 EPA 6020	
048198016		EPA 3005A	71681		71750 71750
048198017	MW-MP8	EPA 3005A	71681	EPA 6020	71750 71750
048198019	MW-NDP	EPA 3005A	71681	EPA 6020	71750
048198002	EB-010317	EPA 7470	71616	EPA 7470	71655
048198003	MW-B9	EPA 7470	71616	EPA 7470	71655
048198004	MW-EB103	EPA 7470	71616	EPA 7470	71655
048198005	MW-EB104	EPA 7470	71616	EPA 7470	71655
048198006	MW-EB105	EPA 7470	71616	EPA 7470	71655
048198007	DUP004	EPA 7470	71616	EPA 7470	71655
048198008	MW-EB106	EPA 7470	71616	EPA 7470	71655
048198009	MW-EB107	EPA 7470	71616	EPA 7470	71655
048198010	MW-EB108	EPA 7470	71616	EPA 7470	71655
048198013	EB-010417	EPA 7470	71616	EPA 7470	71655
048198014	MW-DP1	EPA 7470	71616	EPA 7470	71655
048198015	MW-MP2	EPA 7470	71616	EPA 7470	71655
048198016	MW-MP3	EPA 7470	71616	EPA 7470	71655
048198017	MW-MP8	EPA 7470	71616	EPA 7470	71655
048198019	MW-NDP	EPA 7470	71616	EPA 7470	71655
048198002	EB-010317	EPA 7470	71675	EPA 7470	71752
048198003	MW-B9	EPA 7470	71675	EPA 7470	71752
048198004	MW-EB103	EPA 7470	71675	EPA 7470	71752
048198005	MW-EB104	EPA 7470	71675	EPA 7470	71752
048198006	MW-EB105	EPA 7470	71675	EPA 7470	71752
048198007	DUP004	EPA 7470	71675	EPA 7470	71752
048198007	MW-EB106	EPA 7470	71675	EPA 7470	71752
048198000 048198009	MW-EB107	EPA 7470	71675	EPA 7470	71752
048198010	MW-EB107	EPA 7470	71675	EPA 7470 EPA 7470	71752
048198013	EB-010417	EPA 7470	71675	EPA 7470 EPA 7470	71752
048198014	MW-DP1	EPA 7470	71675	EPA 7470	71752
048198015	MW-MP2	EPA 7470	71675	EPA 7470	71752
048198016	MW-MP3	EPA 7470	71675	EPA 7470	71752
048198017	MW-MP8	EPA 7470	71675	EPA 7470	71752
048198019	MW-NDP	EPA 7470	71675	EPA 7470	71752



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Date: 01/18/2017 12:36 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
2048198002	EB-010317	EPA 3510	71484	EPA 8270 by SIM	71596
2048198003	MW-B9	EPA 3510	71484	EPA 8270 by SIM	71596
2048198004	MW-EB103	EPA 3510	71484	EPA 8270 by SIM	71596
2048198005	MW-EB104	EPA 3510	71484	EPA 8270 by SIM	71596
2048198006	MW-EB105	EPA 3510	71484	EPA 8270 by SIM	71596
2048198007	DUP004	EPA 3510	71484	EPA 8270 by SIM	71596
2048198008	MW-EB106	EPA 3510	71484	EPA 8270 by SIM	71596
2048198009	MW-EB107	EPA 3510	71484	EPA 8270 by SIM	71596
2048198010	MW-EB108	EPA 3510	71484	EPA 8270 by SIM	71596
2048198013	EB-010417	EPA 3510	71561	EPA 8270 by SIM	71719
2048198014	MW-DP1	EPA 3510	71561	EPA 8270 by SIM	71719
2048198015	MW-MP2	EPA 3510	71561	EPA 8270 by SIM	71719
2048198016	MW-MP3	EPA 3510	71561	EPA 8270 by SIM	71719
2048198017	MW-MP8	EPA 3510	71561	EPA 8270 by SIM	71719
2048198019	MW-NDP	EPA 3510	71561	EPA 8270 by SiM	71719
2048198001	TB-010317	EPA 5030B/8260	71490		
2048198002	EB-010317	EPA 5030B/8260	71490		
2048198003	MW-B9	EPA 5030B/8260	71490		
2048198004	MW-EB103	EPA 5030B/8260	71490		
2048198005	MW-EB104	EPA 5030B/8260	71490		
2048198006	MW-EB105	EPA 5030B/8260	71490		
2048198007	DUP004	EPA 5030B/8260	71490		
2048198008	MW-EB106	EPA 5030B/8260	71490		
2048198009	MW-EB107	EPA 5030B/8260	71490		
2048198010	MW-EB108	EPA 5030B/8260	71490		
2048198011	FB-010317	EPA 5030B/8260	71490		
2048198012	TB-010417	EPA 5030B/8260	71490		
2048198013	EB-010417	EPA 5030B/8260	71490		
2048198014	MW-DP1	EPA 5030B/8260	71490		
2048198015	MW-MP2	EPA 5030B/8260	71490		
2048198016	MW-MP3	EPA 5030B/8260	71490		
2048198017	MW-MP8	EPA 5030B/8260	71490		
2048198018	TB-010417-2	EPA 5030B/8260	71490		
2048198019	MW-NDP	EPA 5030B/8260	71490		
2048198020	FB-010417	EPA 5030B/8260	71490		



CHAIN-OF-CUSTODY / An WO#: 2048198

/ www.pacelabs.com			I) II i i na usa (m)	御経験 (B and Mill) a series		,		
Section A	Section B		Section C			012		
Required Client Information:	Required Project Information:		Invoice Information: 2048198	and the state of t	20	75139		
Company: Arws	Report To:	Callera	Attention:		ے کے	11010		
Address: Her Clayor Switz UCI	Сору То:		Company Name:	REGULATORY AGEN	ICY.			
23165Km 1.2 campalo			Address:	F NPDES F GR	DES GROUND WATER DRINKING WATER			
Email To: Daldun @ ariable . wi. com	Purchase Order No.:		Pace Quote Reference:	F UST F RCI	RA I	OTHER		
Phone: 177-177-1750 Fax: 150-177-170-1505	Project Name:	Maris san Alia	Pace Project Manager: Jun Redindo	Site Location	<u> </u>			
Requested Due Date/TAT: 5 Panilari)	Project Number:	i net	Pace Profile #:	STATE: V	<u>.P </u>			
3) 27,020	5067	<u>6-38</u>		Requested Analysis Filtered (Y/N	y 230, 800, 100			
			Preservatives					
	Codes / CODE ater DW WT or WW P SL OSL OSL OSL OSL OSL OSL OSL OSL OSL	COLLECTED	Preservatives >		My Ellisten (
Drinking Wa Water	ater DW sg O	NO C						
Waste Wate Product	er www biller w	IMPOSITE COMPOSITE START END/GRAB		ज यदी	(NE			
Soil/Solid	CL See valid S=GRAB			(42) (42) (15) (15) (15) (15)	Chlorine (Y/N)			
SAMPLE ID Wipe	AAGE TOTAL		AINERS 9d 5. Test	10 20 1	Öriri			
Sample IDs MUST BE UNIQUE Tissue	S SY SY SY SY SY SY SY SY SY SY SY SY SY		A N Sign	1811 1811 1	[5]			
Other	어 중 말		allys		dua			
ITEM#	MATRIX SAMPLE	F TIME DATE TIME	# OF CONTAINERS Unpreserved H ₂ SO ₄ HNO ₃ HCI NaOH Na ₂ S ₂ O ₃ Methanol Other	6.85 4 100 / 58 / 58 / 58 / 58 / 58 / 58 / 58 /	Residual	ace Project No./ Lab I.D.		
	DATI Not (re	e time date time of	4 4 x					
1 TB-010319	W G	01/03/11/04/43	105 14 2					
2 EB-01031)	M. C	01/03/17/0936	10 S 1 4 S	1 x x x x x				
3 MW-B9	VT 0-	2/03/11/02/	10 5 14	ौर्रोश्रेश श ि				
4 MY EB103	W O	51/02/11/126	10 3 14 2					
5 MN-EBIOH		6/63/P 1345	los lu					
6 MY-EBIDS	MG	0,0010 1345	105 14 1					
MW- EGIRE (MS)		0/04/1/3/5						
8 MW- BBIOS (MSD)	WT (j.	0163/1						
		01/03/11 143-8	10 5 114					
10 MW - EB 106	MT 6	cilo3/14 1511	105 14	XXXXX				
11 MY EBION	VT 6	5/53/M 1501	155 141 1					
12 MY-EGIOS		BY/AFFILIATION DATE	TIME ACCEPTED BY A	The second secon	S	AMPLE CONDITIONS		
ADDITIONAL COMMENTS	gallig in Marine girt de garen betite alat i Ar	<u> </u>			a 0.7			
Level TO	100 -10A	Whole afond	1508	/pac 14-17/50	~ -			
	2	- Marc 1-4-17	1800 Fed Ex	, ()	0.5			
		Fadto 1-5-19	910 CA	- Tare 15-17 0910	01.11	191		
י			()	- 1/	1.0			
Page 76 of 78	- 1	SAMPLER NAME AND SIGNATU	RE C		့ မွ	Custody Sealed Cooler (Y/N) Samples Intact (Y/N)		
76	DRIGINAL	PRINT Name of SAMPLE	R: Andricolon		Temp in °C	Custody Sealed Cook (Y/N) (Y/N) (Y/N)		
of 7		SIGNATURE of SAMPLE		DATE Signed (MM/DD/YY): 011/04/1	Rec 7	Samp L		
Ç0		l .	LP VII	promise exist for we want of the				



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Section	в		Section C			Page:	2 of Z
	d Project Information:		Invoice Information:				2075140
Company: Arcadis Report To	- PENNIN	(a)gran	Attention:			<u> </u>	LUIULTU
Address: Cty View Plaza Smite 401 Copy To:	: 		Company Name:		REGULATORY A	GENCY	
Rd 165 km 1,2 pungabo P. R		•	Address:		NPDES T	GROUND WAT	ER DRINKING WATER
Email To: Email To: Purchase	e Order No.:		Pace Quote Reference:		F UST F	RCRA	OTHER
Phone: 177-4000 (Fax: 171-4046 Project N	lame: Tercial	Mw Sampling	Pace Project Manager: TLm Re	cence	Site Location	^ \	
Requested Due Date/TAT: 5}-a-do-d Project N		1.000	Pace Profile #:		STATE:	PR	
273460-0	30-5, 1	3-35	<u> </u>	Req⊔ested /	Analysis Filtered	(Y/N)	
Section D Matrix Codes	₽ 5	.]		TW.A			
Required Client Information MATRIX / CODE	(see velid codes to lert)	COLLECTED	Preservatives				
Drinking Water DW Water WT		SITE COMPOSITE DI COMPOSITE T END/GRAB U		7 4015	5		
Waste Water WW Product P	(G=GRAB	T END/GRAB				Residual Chlorine (Y/N)	
SAMPLE ID Soit/Solid SL OL OL OL WIRD	888 15	[S		SOUS SOUS SOUS SOUS SOUS SOUS SOUS SOUS	merch;	l le (•
		P A		20 S S S S S S S S S S S S S S S S S S S	2 2	l ei	and the second second
(A-Z, 0-9 / ,) Air AR Sample IDs MUST BE UNIQUE Tissue TS Other OT	CODE	TEMP .	NT S S S	sis C	4 3		
I I		1 1 1 1 1	Paramos Established	Analys VOCS DRO/ SYCC/S	5 5	idue	
TEM #	MATRIX SAMPLE	TIME DATE TIME 0	# OF CONTAINERS Unpreserved H ₂ SO ₄ HNO ₃ HCI NaOH Na ₂ S ₂ O ₃ Methanol Other	TOCS FOCS DRO/ Svocs	10.500 Notes	Res	Pace Project No./ Lab I.D.
FB-016317	WT 0-	0:63/1 1610	4 4	XX			
2 TB-010417	er o	DI/OH/I) LAB	4 4	**			
3 FB - 010417	W G	pilouli) pissa	10514	XXXX	メメ		
4 MW-DPI	VI G	01/24/17 0936	10 5 14	アメメメ	とメ		
5 MW-MPZ	W+ G-	3/64/11025	10 5 1 4	ングスメ	* *		
6 MW-MP3	KT Co-	ab4/3 1146	10514	イイイン	メメ		
7 MW-MP8	ny 60	0164/13 1333	10514	\ \ \x \ \ \\	メメ		
8 7B-010417-2	MC	OLAYAN LAB	4 4	XX			
9 MW TAP9	NT G	01/04/13 1422	105 14		/XX		
10 FB-010417	W- O-	a/e4/1 1430	4 4	XX			
11							
12							
ADDITIONAL COMMENTS	RELINQUISHED BY	AFFILIATION DATE	TIME ACCEPTE	D BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
ional tu An	A molostula	rends alloylis	1508	More	- 1-4A 19	5.00	
		Jpag 1-4-17	- Company of the Comp	ED A			
	1-			X - // -	1-5-17 0	910	(1) (1)
		d Eo 15-17	1510	- Jar	ا الرا		414
0				e de la companya de l			t 2
ORIGINA	AL.	SAMPLER NAME AND SIGNATU	<u> </u>			Temp in °C	Received on loe (Y/N) Custody Sealed Cooler (Y/N) Samples Intact (Y/N)
77-0		PRINT Name of SAMPLEI	· Andmicolon	BATE Signed		du	ceiv loe () Cust (γ//) (γ//)
Page 77 of 78		SIGNATURE of SAMPLES	R: What for any invalors not paid within 30 days	(MM/DD/YY):	0)/04/1)		Q-020rev.07, 15-May-2007

WO#:2048198



Sample Condition PM: JAR1

Due Date: 01/18/17

Pace Analytical	- P	CLIE	NT: 98-AR	CADISPR	
1000 Riverbend. St. Rose, LA 700					
Courier: Pace Courier Hired Co	ourier Fed X	□ UPS	□ DHL	□ USPS □ Customer	□ Other
Custody Seal on Cooler/Box Present:	[see COC]			Custody Seals intact	es □No
Therometer Used: Therm Fisher IR 5 Therm Fisher IR 6 Therm Fisher IR 7	Type of Ice:	Wet	3lue None	Samples on ice: [see 0	000]
Cooler Temperature: [see COC]	Temp should be ab	ove freezing	j to 6°C	Date and Initials of person example contents:	nining 4
Temp must be measured from Temperature blank	when present	Comr	ments:		
Temperature Blank Present"?	Yes 🗆 No	□N/A 1			
Chain of Custody Present:	Yes □No	□N/A 2			
Chain of Custody Complete:	ZYes □No	□N/A 3			
Chain of Custody Relinquished:	∑Yes □No	□n/a 4			
Sampler Name & Signature on COC:	YBS [No	□N/A 5			
Samples Arrived within Hold Time:	Yes □No I	□n/a 6	•		
Sufficient Volume:	Yes □No	□nia 7			
Correct Containers Used:	√es □No	□n/a 8			
Filtered vol. Rec. for Diss. tests	☐Yes ☐No 4	EN/A 9			
Sample Labels match COC:		□N/A 10	·		
All containers received within manafacture's precautionary and/or expiration dates.	JA es □No	□n/A ₁₁			
All containers needing chemical preservation been checked (except VOA, coliform, & O&C		□N/A 12		·	
All containers preservation checked found to compliance with EPA recommendation.	o be in Yes No	□N/A 13		oreserative added? □Yes □No cord lot no.: HNO3 H2\$	SO4
Headspace in VOA Vials (>6mm):	□Yes ☑No	□ N/A 14			
Trip Blank Present:	ZYes □No	15			
Client Notification/ Resolution:					_
Person Contacted:				Date/Time:	
Comments/ Resolution:					
			·		





January 18, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 05, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Juan Redondo

juan.redondo@pacelabs.com

Project Manager

Enclosures

cc: Sharon Colon

Abner Hernandez

Marianela Mercado-Burgos







CERTIFICATIONS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):

E-1026

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02008

Pennsylviania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048222001	TB-010517	Water	01/05/17 00:00	01/05/17 12:50
2048222002	EB-010517	Water	01/05/17 08:46	01/05/17 12:50
2048222003	MW-48A	Water	01/05/17 09:42	01/05/17 12:50
2048222004	MW-109A	Water	01/05/17 11:05	01/05/17 12:50
2048222005	DUP005	Water	01/05/17 00:00	01/05/17 12:50
2048222006	MW-M14	Water	01/05/17 11:34	01/05/17 12:50
2048222007	FB-010517	Water	01/05/17 11:38	01/05/17 12:50



SAMPLE ANALYTE COUNT

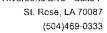
Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048222001	TB-010517	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222002	EB-010517	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222003	MW-48A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222004	MW-109A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	мнв1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222005	DUP005	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222006	MW-M14	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	$M {dash} M$	2	PASI-N
		EPA 6020	KJR	4	PASI-N





SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
•		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222007	FB-010517	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N



PROJECT NARRATIVE

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71577

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:





PROJECT NARRATIVE

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Method:

EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client: Date:

BBL Caribe / Arcadis PR January 18, 2017

General Information:

7 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Method: EPA 6020

Description: 6020 MET ICPMS

Client:

BBL Caribe / Arcadis PR

Date:

January 18, 2017

General Information:

5 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71617

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047753015

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299686)
 - Arsenic
- MSD (Lab ID: 299687)
 - Arsenic





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client:

BBL Caribe / Arcadis PR

Date:

January 18, 2017

General Information:

5 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71683

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- · LCS (Lab ID: 300011)
 - · Vanadium, Dissolved

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Batch Comments:

Insufficient sample volume to perform MS/MSD analysiws.

• QC Batch: 71749





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Method:

EPA 7470 Description: 7470 Mercury

Client:

BBL Caribe / Arcadis PR

Date:

January 18, 2017

General Information:

5 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Method:

EPA 8270 by SIM

Client:

Description: 8270 MSSV PAH by SIM SEP

Date:

BBL Caribe / Arcadis PR January 18, 2017

General Information:

5 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71665

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Method:

EPA 5030B/8260 Description: 8260 MSV Low Level

Client:

BBL Caribe / Arcadis PR

Date:

January 18, 2017

General Information:

7 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71630

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 299870)
 - · Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71630

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048288001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- · MS (Lab ID: 299871)
 - · Carbon disulfide
- MSD (Lab ID: 299872)
 - · Carbon disulfide

R1: RPD value was outside control limits.

- MSD (Lab ID: 299872)
 - · Carbon disulfide





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Method:

EPA 5030B/8260 Description: 8260 MSV Low Level BBL Caribe / Arcadis PR

Client: Date:

January 18, 2017

Additional Comments:

Analyte Comments:

QC Batch: 71630

C9: Common Laboratory Contaminant.

- DUP005 (Lab ID: 2048222005)
 - Acetone
- EB-010517 (Lab ID: 2048222002)
 - Acetone
- FB-010517 (Lab ID: 2048222007)
 - Acetone
- MW-109A (Lab ID: 2048222004)
 - Acetone
- MW-48A (Lab ID: 2048222003)
 - Acetone
- · MW-M14 (Lab ID: 2048222006)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project:

o-Xylene

Date: 01/18/2017 12:38 PM

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

Sample: TB-010517	Lab ID: 204	8222001	Collected: 01/05/1	17 00:00	Received		(≱≀x: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Arranyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021			v		
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 15:30		
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/12/17 15:30	460-00-4	
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	182	ug/L	4.0	1		01/10/17 12:16	67-64-1	
Benzene	ND	ug/L	0.50	1		01/10/17 12:16	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 12:16	75-27-4	
Bramoform	ND	ug/L	0.50	1		01/10/17 12:16	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:16	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:16	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:16	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:16		
Chloroethane	ND	ug/L	0.50	1		01/10/17 12:16	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 12:16	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 12:16		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:16		
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:16		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 12:16		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 12:16		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:16		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:16		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:16		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 12:16		
trans-1,2-Dichloroethene	ND	ug/L ug/L	0.50	1		01/10/17 12:16		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 12:16		
cis-1,3-Dichloropropene	ND	ug/L ug/L	0.50	1				
trans-1,3-Dichloropropene	ND	ug/L ug/L	0.50	1		01/10/17 12:16 01/10/17 12:16		
Ethylbenzene	ND	-	0.50	1				
2-Hexanone	ND ND	ug/L				01/10/17 12:16		
		ug/L	1.0	1 1		01/10/17 12:16		
Isopropylbenzene (Cumene)	ND	ug/L	1.0			01/10/17 12:16		
Methylaga Chlarida	ND	ug/L	2.0	1		01/10/17 12:16		
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 12:16		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 12:16		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 12:16		
Styrene	ND	ug/L	1.0	1		01/10/17 12:16		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 12:16		
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 12:16		
Toluene	ND	ug/L	0.50	1		01/10/17 12:16		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:16		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:16		
Trichloroethene	ND	ug/L	0.50	1		01/10/17 12:16		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 12:16	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 12:16	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 12:16	179601-23-1	1
o-Xylana	ND	uall	1.0	1		04/40/47 49-14	05 47 6	

REPORT OF LABORATORY ANALYSIS

1.0

ND

ug/L

01/10/17 12:16 95-47-6



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ANALYTICAL RESULTS

PUMA TERMINAL MW SAMPLING

Benzo(a)anthracene

Date: 01/18/2017 12:38 PM

Benzo(a)pyrene

Pace Project No.: 2048222					Received:		J/4/	
Sample: TB-010517	Lab ID: 204	8222001	Collected: 01/05/1	7 00:00	Received:	Win Ares	al Vater	
Parameters	Results	Units	Report Limit	DF	Prepared	Allalyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	113	%.	72-126	1		01/10/17 12:16		
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/10/17 12:16		
Toluene-d8 (S)	99	%.	79-119	1		01/10/17 12:16	2037-26-5	
Sample: EB-010517	Lab ID: 204	8222002	Collected: 01/05/1	7 08:46	Received: 01	/05/17 12:50 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ration N	1ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:03		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/09/17 19:03		
Surrogates			,,,	,				
n-Pentacosane (S)	60	%.	16-137	1	01/09/17 07:20	01/09/17 19:03	629-99-2	
o-Terphenyl (S)	64	%.	10-121	1	01/09/17 07:20	01/09/17 19:03	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meti	hod: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 15:57		
Surrogates		•						
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/12/17 15:57	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 60	020 Preparation Meth	nod: EP	A 3010			
Arsenic	ND	mq/L	0.0010	1	01/09/17 15:32	01/13/17 20:57	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:57	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:57	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 20:57	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	020 Preparation Met	nod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:03	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		01/13/17 23:03		
Lead, Dissolved	ND	ug/L	1.0	1		01/13/17 23:03		
Vanadium, Dissolved	ND	ug/L	5.0	1		01/13/17 23:03		L3
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:51	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	A 7 4 70			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:01	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8:	270 by SIM Preparat	ion Met	hod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1		01/10/17 20:58		
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	120-12-7	
		·						

REPORT OF LABORATORY ANALYSIS

0.10

0.10

1

ND

ND

ug/L

ug/L





ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

4-Methyl-2-pentanone (MIBK)

Date: 01/18/2017 12:38 PM

2048222

Pace Project No.: 2048222						MAN		
Sample: EB-010517	Lab ID: 204	18222002	Collected: 01/05/	17 08:46	Received.	TO THE	Water Water	
Parameters	Results	Units	Report Limit	DF	Prepared		CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparat	ion Meth	nod: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	193-39 - 5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	129-00-0	
Surrogates		J						
2-Fluorobiphenyl (S)	86	%.	25-150	1	01/10/17 09:46	01/10/17 20:58	321-60-8	
Terphenyl-d14 (S)	79	%.	25-150	1	01/10/17 09:46	01/10/17 20:58	1718-51-0	
8260 MSV Low Level	Analytical Met	thod: EPA 5	030B/8260					
Acetone	14.6	ug/L	4.0	1		01/10/17 12:34	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 12:34		00
Bromodichloromethane	0.61	ug/L	0.50	1		01/10/17 12:34		
Bromoform	ND	ug/L	0.50	1		01/10/17 12:34		
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:34		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:34		
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:34		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:34		_0
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:34		
Chloroethane	ND	ug/∟ ug/L	0.50	1		01/10/17 12:34		
Chloroform	3.1	ug/L	0.50	1		01/10/17 12:34		
Chloromethane	ND	ug/L	0.50	1		01/10/17 12:34		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:34		
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:34		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 12:34	=	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 12:34		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:34		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:34		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:34		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 12:34		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:34		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 12:34		
cis-1,3-Dichloropropene	ND	ug/L ug/L	0.50	1		01/10/17 12:34		
trans-1,3-Dichloropropene	ND	ug/L ug/L	0.50	1		01/10/17 12:34		
Ethylbenzene	ND ND	ug/L ug/L	0.50	1		01/10/17 12:34		
2-Hexanone	ND ND	ug/L ug/L	1.0	1		01/10/17 12:34		
Isopropylbenzene (Cumene)	ND ND	ug/L ug/L	1.0	1		01/10/17 12:34		
Methyl acetate	ND	ug/L ug/L	2.0	1		01/10/17 12:34		
Methylene Chloride	ND	ug/L ug/L	0.50	1		01/10/17 12:34		
A Methyl 2 peniapana (MIRK)	ND	ug/L	0.30	1		01/10/17 12.34		

REPORT OF LABORATORY ANALYSIS

1.0

ND

ug/L

01/10/17 12:34 108-10-1

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Vanadium, Dissolved

Date: 01/18/2017 12:38 PM

2048222

Sample: EB-010517	Lab ID: 204	8222002	Collected: 01/05/1	17 08:46		/NS/17 12/80 /V	17	
Parameters	Results	Units	Report Limit	DF	Prepared	Control of the	CION.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260			The The		
Methyl-terf-butyl ether	ND	ug/L	0.50	1		01/10/17 12:34	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 12:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 12:34	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 12:34	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 12:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:34	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 12:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 12:34	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 12:34	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 12:34	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 12:34		
Surrogates		J						
Dibromofluoromethane (S)	110	%.	72-126	1		01/10/17 12:34	1868-53-7	
4-Bromofluorobenzene (S)	95	%.	68-124	1		01/10/17 12:34	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 12:34	2037-26-5	
					. <u> </u>			
Sample: MW-48A	Lab ID: 204	8222003	Collected: 01/05/	17 09:42	Received: 01	/05/17 12:50 N	latrix: Water	
Parameters	Results	Unils	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	nod: EPA 8	015B Modified Prepa	aration M	lethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:31		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		01/09/17 19:31		
n-Pentacosane (S)	73	%.	16-137	1	01/09/17 07:20	01/09/17 19:31	629-99-2	
o-Terphenyl (S)	69	%.	10-121	1		01/09/17 19:31		
8021 GCV BTEX, MTBE, GRO	Analytical Met	nod: EPA 8	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 12:01		
Surrogates 4-Bromofluorobenzene (S)	90	%.	44-148	1		01/12/17 12:01	460-00-4	
6020 MET ICPMS	Analytical Met		020 Preparation Met	hod: EP	A 3010			
Arsenic	-		•			01/13/17 21:01	7///0_29 2	
	ND ND	mg/L	0.0010	1		01/13/17 21:01		
Chromium	ND 0.0031	mg/L mg/L	0.0010	1		01/13/17 21:01		
Lead	0.100.53	ma/E	0.0010	1	0.1/09/17 15:32	01/13/17 21:01	7408-82-1	
\ law a dicor		_	0.0050	- 4	04/00/47 45:00	04/40/47 04:04	7440 00 0	
Vanadium	ND	mg/L	0.0050	1		01/13/17 21:01	7440-62-2	
Vanadium 6020 MET ICPMS, Dissolved (LF)	ND	mg/L	0.0050 020 Preparation Met			01/13/17 21:01	7440-62-2	
	ND	mg/L			A 3005A	01/13/17 21:01 01/13/17 23:06		
6020 MET ICPMS, Dissolved (LF)	ND Analytical Met	mg/L hod: EPA 6	020 Preparation Met	thod: EP	A 3005A 01/10/17 11:44		7440-38-2	

REPORT OF LABORATORY ANALYSIS

ND

ug/L

(504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: Sample: MW-48A

Date: 01/18/2017 12:38 PM

2048222

Lab ID: 2048222003

Collected: 01/05/17 09:42

Parameters	Results	Units	Report Limit	DF	Prepared	ico Hall	AS No.	Qual
7470 Mercury	Analytical Meth	nod: EPA 747	'0 Preparation Meth	od: EF	PA 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:14	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 747	70 Preparation Meth	nod: EF	PA 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:03	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 827	'0 by SIM Preparati	on Me	thod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/10/17 21:18		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/10/17 21:18		
Chrysene	ND	ug/L	0.10	1		01/10/17 21:18		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/10/17 21:18		
Fluoranthene	ND	ug/L	0.10	1		01/10/17 21:18		
Fluorene	ND	ug/L	0.10	1		01/10/17 21:18		
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	91-57-6	
Naphthalene	ND	ug/L	0.10	1		01/10/17 21:18		
Phenanthrene	ND	ug/L	0.10	1		01/10/17 21:18		
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	80	%.	25-150	1		01/10/17 21:18		
Terphenyl-d14 (S)	78	%.	25-150	1	01/10/17 09:46	01/10/17 21:18	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 500	30B/8260					
Acetone	33.0	ug/L	4.0	1		01/10/17 12:52		C9
Benzene	ND	ug/L	0.50	1		01/10/17 12:52	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 12:52	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 12:52	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:52	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:52	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:52	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:52	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 12:52	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 12:52	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 12:52		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:52	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:52		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 12:52		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 12:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:52		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:52	107-06-2	

REPORT OF LABORATORY ANALYSIS

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Gasoline Range Organics

4-Bromofluorobenzene (S)

Date: 01/18/2017 12:38 PM

Surrogates

2048222

Sample: MW-48A	Lab ID: 204	8222003	Collected: 01/05/1	7 09:42	Receive // 25/17/11/5 Water
Parameters	Results	Units	Report Limit	DF	Prepared Alarra CAS No. Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260		
1,1-Dichloroethene	ND	ug/L	0.50	1	01/10/17 12:52 75-35-4
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/10/17 12:52 156-59-2
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/10/17 12:52 156-60-5
1,2-Dichloropropane	ND	ug/L	0.50	1	01/10/17 12:52 78-87-5
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 12:52 10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 12:52 10061-02-6
Ethylbenzene	ND	ug/L	0.50	1	01/10/17 12:52 100-41-4
2-Hexanone	ND	ug/L	1.0	1	01/10/17 12:52 591-78-6
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/10/17 12:52 98-82-8
Methyl acetate	ND	ug/L	2.0	1	01/10/17 12:52 79-20-9
Methylene Chloride	ND	ug/L	0.50	1	01/10/17 12:52 75-09-2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/10/17 12:52 108-10-1
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/10/17 12:52 1634-04-4
Styrene	ND	ug/L	1.0	1	01/10/17 12:52 100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/10/17 12:52 79-34-5
Tetrachloroethene	ND	ug/L	0.50	1	01/10/17 12:52 127-18-4
Toluene	ND	ug/L	0.50	1	01/10/17 12:52 108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/10/17 12:52 71-55-6
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/10/17 12:52 79-00-5
Trichloroethene	ND	ug/L	0.50	1	01/10/17 12:52 79-01-6
Trichlorofluoromethane	ND	ug/L	0.50	1	01/10/17 12:52 75-69-4
Vinyl chloride	ND	ug/L	0.50	1	01/10/17 12:52 75-01-4
m&p-Xylene	ND	ug/L	2.0	1	01/10/17 12:52 179601-23-1
o-Xylene	ND	ug/L	1.0	1	01/10/17 12:52 95-47-6
Surrogates	ND	ugic	1.0		01730117 12.02 00 47 0
Dibromofluoromethane (S)	115	%.	72-126	1	01/10/17 12:52 1868-53-7
4-Bromofluorobenzene (S)	97	%.	68-124	1	01/10/17 12:52 460-00-4
Toluene-d8 (S)	102	%.	79-119	1	01/10/17 12:52 2037-26-5
Sample: MW-109A	Lab ID: 204	8222004	Collected: 01/05/	17 11:05	5 Received: 01/05/17 12:50 Matrix: Water
Parameters	Results	Units	Report Limit	DF	Prepared Analyzed CAS No. Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	aration N	Method: EPA 3535
Discal Barra Orn (040 000)	ND	w- = 11	0.50		04/00/47 07:00 04/00/47 40:50
Diesel Range Organic (C10-C28)	ND ND	mg/L	0.50	1	01/09/17 07:20 01/09/17 19:59
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20 01/09/17 19:59
Surrogates	59	%.	16-137	1	01/09/17 07:20 01/09/17 19:59 629-99-2
n-Pentacosane (S)	59 63	%. %.	10-137	1	01/09/17 07:20 01/09/17 19:59 829-99-2
o-Terphenyi (S)	03	70.	10-121	ı	01/03/17 07.20 01/03/17 13.03 04-10-1
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021		

REPORT OF LABORATORY ANALYSIS

50.0

44-148

ND

91

ug/L

%.

01/12/17 12:27

01/12/17 12:27 460-00-4

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/18/2017 12:38 PM

2048222

Sample: MW-109A Lab ID: 2048222004 Collected: 01/05/17 11:05 Vater CAS No. Parameters Results Units Report Limit DE Qual Analytical Method: EPA 6020 Preparation Method: EPA 3010 6020 MET ICPMS Arsenic NΩ mg/L 0.0010 01/09/17 15:32 01/13/17 21:05 7440-38-2 Chromium ND mg/L 0.0010 01/09/17 15:32 01/13/17 21:05 7440-47-3 Lead ND mg/L 0.0010 01/09/17 15:32 01/13/17 21:05 7439-92-1 0.0050 Vanadium ND mg/L 1 01/09/17 15:32 01/13/17 21:05 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND ug/L 1.0 01/10/17 11:44 01/13/17 23:10 7440-38-2 Chromium, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/13/17 23:10 7440-47-3 Lead, Dissolved ND ug/L 1.0 1 01/10/17 11:44 01/13/17 23:10 7439-92-1 Vanadium, Dissolved ND ug/L 5.0 1 01/10/17 11:44 01/13/17 23:10 7440-62-2 13 Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury ND 0.20 1 01/09/17 15:19 01/09/17 19:53 7439-97-6 Mercury ug/L 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 ug/L Mercury, Dissolved ND 0.20 01/10/17 12:30 01/10/17 18:09 7439-97-6 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 ND Acenaphthene uq/L 0.10 1 ND Acenaphthylene ug/L 0.10 1 Anthracene ND ug/L 0.10 1 Benzo(a)anthracene ND 0.10 ug/L 1 NΩ Benzo(a)pyrene 0.10 1 ug/L Benzo(b)fluoranthene ND 0.10 ug/L 1 Benzo(g,h,i)perylene NΩ ug/L 0.10 1 01/10/17 09:46 01/10/17 21:38 191-24-2 Benzo(k)fluoranthene NΠ ug/L 0.101 01/10/17 09:46 01/10/17 21:38 207-08-9 0.10 Chrysene ND 1 01/10/17 09:46 01/10/17 21:38 218-01-9 ug/L ND 0.10 01/10/17 09:46 01/10/17 21:38 53-70-3 Dibenz(a,h)anthracene 1 υg/L Fluoranthene ND 0.10 1 ua/L Fluorene ND 0.10 1 01/10/17 09:46 01/10/17 21:38 86-73-7 uq/L Indeno(1,2,3-cd)pyrene ND 0.10 1 ug/L 2-Methylnaphthalene ND 0.10 1 01/10/17 09:46 01/10/17 21:38 91-57-6 ug/L Naphthalene ND 0.10 1 01/10/17 09:46 01/10/17 21:38 91-20-3 ug/L Phenanthrene ND ug/L 0.10 1 Pyrene ND ug/L 0.10 1 01/10/17 09:46 01/10/17 21:38 129-00-0 Surrogates 2-Fluorobiphenyl (S) 97 25-150 %. 1 25-150 Terphenyl-d14 (S) 85 %. 1 01/10/17 09:46 01/10/17 21:38 1718-51-0 Analytical Method: EPA 5030B/8260 8260 MSV Low Level Acetone 6.3 4.0 1 01/10/17 13:10 67-64-1 C9 ug/L Benzene ND ug/L 0.50 01/10/17 13:10 71-43-2 1 Bromodichloromethane ND ug/L 0.50 1 01/10/17 13:10 75-27-4 Bromoform ND ug/L 0.50 1 01/10/17 13:10 75-25-2 Bromomethane ND ug/L 0.50 1 01/10/17 13:10 74-83-9 2-Butanone (MEK) ND ug/L 2.0 01/10/17 13:10 78-93-3

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Date: 01/18/2017 12:38 PM

Sample: MW-109A	Lab ID: 204	8222004	Collected: 01/05/1	7 11:05	Ricewat: 01/03/17/19/00 Marris: Water	
Parameters	Results	Units	Report Limit	DF	Pres. CAS No.	Qual
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260		470	
Carbon disulfide	ND	ug/L	1.0	1	01/10/17 13:10 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/10/17 13:10 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/10/17 13:10 108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/10/17 13:10 75-00-3	
Chloroform	ND	ug/L	0.50	1	01/10/17 13:10 67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/10/17 13:10 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/10/17 13:10 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/10/17 13:10 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/10/17 13:10 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/10/17 13:10 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/10/17 13:10 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/10/17 13:10 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/10/17 13:10 75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/10/17 13:10 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/10/17 13:10 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/10/17 13:10 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 13:10 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 13:10 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/10/17 13:10 100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/10/17 13:10 591-78-6	
isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/10/17 13:10 98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/10/17 13:10 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/10/17 13:10 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/10/17 13:10 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/10/17 13:10 1634-04-4	
Styrene	ND	ug/L	1.0	1	01/10/17 13:10 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/10/17 13:10 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/10/17 13:10 127-18-4	
Toluene	ND	ug/L	0.50	1	01/10/17 13:10 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/10/17 13:10 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/10/17 13:10 79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/10/17 13:10 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/10/17 13:10 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/10/17 13:10 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/10/17 13:10 179601-23-	1
o-Xylene	ND	ug/L	1.0	1	01/10/17 13:10 95-47-6	
Surrogates		_				
Dibromofluoromethane (S)	114	%.	72-126	1	01/10/17 13:10 1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1	01/10/17 13:10 460-00-4	
Toluene-d8 (S)	99	%.	79-119	1	01/10/17 13:10 2037-26-5	



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St. Rose, LA 70087 (504)469-0333

ANALYTICAL RESULTS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/18/2017 12:38 PM

2048222

Sample: DUP005	Lab ID: 204	8222005	Collected: 01/05/1	7 00:00	Received:	UCO TREE	at x: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 80	15B Modified Prepa	ration M	lethod: EPA 3535			
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 20:26		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 20:26		
Surrogates n-Pentacosane (S)	60	%.	16-137	1	01/09/17 07:20	01/09/17 20:26	629-99-2	
p-Terphenyl (S)	64	%.	10-121	1		01/09/17 20:26		
3021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	15/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 12:53		
Surrogates 4-Bromofluorobenzene (S)	86	%.	44-148	1		01/12/17 12:53	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 60	20 Preparation Met	nod: EP	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	7440-47-3	
_ead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	7439-92-1	
/anadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:08	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	thod: EPA 60	20 Preparation Met	nod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:14	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:14	7440-47-3	
_ead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:14	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:14	7440-62-2	L3
7470 Mercury	Analytical Met	thod: EPA 74	70 Preparation Met	hod: EP	PA 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:55	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	thod: EPA 74	170 Preparation Met	hod: EF	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:11	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Me	thod: EPA 82	270 by SIM Preparat	ion Met	hod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/10/17 21:58		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/10/17 21:58		
Chrysene	ND	ug/L	0.10	1		01/10/17 21:58		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/10/17 21:58		
Fluoranthene	ND	ug/L	0.10	1		01/10/17 21:58		
Fluorene	ND	ug/L	0.10	1		01/10/17 21:58		
Lidolone	ND	ug/∟ ug/L	0.10	1		01/10/17 21:58		
Indepo(1.2.3-cd)pyrene		a qı L	0,10	,	2			
***			D 10	1	01/10/17 09:46	01/10/17 21:58	91-57-6	
Indeno(1,2,3-cd)pyrene 2-Methylnaphthalene Naphthalene	ND ND	ug/L ug/L	0.10 0.10	1 1		6 01/10/17 21:58 6 01/10/17 21:58		

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

Pace Project No.:

Date: 01/18/2017 12:38 PM

2048222

Sample: DUP005 Lab ID: 2048222005

PUMA TERMINAL MW SAMPLING Collected: 01/05/17 00:00

Parameters	Results	Units	Report Limit	DF	Ргер	LICENTE	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 827	0 by SIM Preparati	on Me			- <u></u> .	-
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	129-00-0	
Surrogates		-3						
2-Fluorobiphenyl (S)	92	%.	25-150	1	01/10/17 09:46	01/10/17 21:58	321-60-8	
Terphenyl-d14 (S)	89	%.	25-150	1	01/10/17 09:46	01/10/17 21:58	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 503	OB/8260					
Acetone	20.0	ug/L	4.0	1		01/10/17 13:28	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 13:28	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 13:28	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 13:28	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 13:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 13:28	78-93-3	
Carbon disulfide	МD	ug/L	1.0	1		01/10/17 13:28	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 13:28	56-23-5	
Chlorobenzene ·	ND	ug/L	0.50	1		01/10/17 13:28	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 13:28	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 13:28	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 13:28	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 13:28		
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 13:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 13:28		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 13:28		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:28		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:28		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:28		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 13:28		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:28		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 13:28		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:28		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:28		
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 13:28		
2-Hexanone	ND	ug/L	1.0	1		01/10/17 13:28		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 13:28		
Methyl acetate	ND	ug/L	2.0	1		01/10/17 13:28		
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 13:28		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 13:28		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 13:28		
	ND	ug/L ug/L	1.0	1		01/10/17 13:28		
Styrene								
1,1,2,2-Tetrachloroethane	ND ND	ug/L	0.50	1		01/10/17 13:28		
Tetrachloroethene		ug/L	0.50	1		01/10/17 13:28		
Toluene	ND	ug/L	/0.50	1		01/10/17 13:28		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:28		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:28		
Trichtoroethene	ND	ug/L	0.50	1		01/10/17 13:28		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 13:28		
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 13:28		
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 13:28	1/9601-23-1	

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ANALYTICAL RESULTS

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PUMA TERMINAL MW SAMPLING

Date: 01/18/2017 12:38 PM

Pace Project No.: 2048222					्राञ्चा 🖯	#5 18	JPJ -	
Sample: DUP005	Lab ID: 204	8222005	Collected: 01/05/1	7 00:00	Received, 01/	05/17/12:17	Water	
Parameters	Results	Units	Report Limit	DF	Prepar	O TO	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	hod: EPA 5	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		01/10/17 13:28	95-47-6	
Dibromofluoromethane (S)	112	%.	72-126	1		01/10/17 13:28	1868-53-7	
4-Bromofluorobenzene (S)	95	%.	68-124	1		01/10/17 13:28	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 13:28	2037-26-5	
Sample: MW-M14	Lab ID: 204	8222006	Collected: 01/05/1	17 11:34	Received: 01	/05/17 12:50 N	latrix: Water	*** *** *** **************************
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	ration M	lethod: EPA 3535			
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 20:54		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20			
Surrogates								
n-Pentacosane (S)	63	%.	16-137	1		01/09/17 20:54		
o-Terphenyl (S)	65	%.	10-121	1	01/09/17 07:20	01/09/17 20:54	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 13:20		
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/12/17 13:20	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EP	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:20	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	7440-47-3	
Lead, Dissolved	ND	ug/∟	1.0	1	01/10/17 11:44	01/13/17 23:18	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:18	7440-62-2	L3
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:01	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:13	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparat	tion Metl	hod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	208-96-8	
Anthracene	ND	ug/L	0.10	1		01/10/17 22:18		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	56-55-3	

Water

(504)469-0333



ANALYTICAL RESULTS

Collected:

01/05/17 11:34

Project:

PUMA TERMINAL MW SAMPLING

Lab ID: 2048222006

ND

ND

ND

ND

ND

ND

MΩ

ND

ND

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ND

ua/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

Pace Project No.:
Sample: MW-M14

1,1-Dichloroethene

cis-1,2-Dichloroethene

1,2-Dichloropropane

Ethylbenzene

Methyl acetate

Methylene Chloride

2-Hexanone

trans-1,2-Dichloroethene

cis-1,3-Dichloropropene

trans-1,3-Dichloropropene

Isopropylbenzene (Cumene)

Date: 01/18/2017 12:38 PM

2048222

Parameters Results CAS No. Units Report Limit Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 35 0.10 Benzo(a)pyrene ND ug/L Benzo(b)fluoranthene ND ug/L 0.10 1 Benzo(g,h,i)perylene ND ug/L 0.10 Benzo(k)fluoranthene ND ug/L 0.10 Chrysene ND ug/L 0.10 01/10/17 09:46 01/10/17 22:18 218-01-9 Dibenz(a,h)anthracene ND 0.10 ug/L Fluoranthene ND 0.10 01/10/17 09:46 01/10/17 22:18 206-44-0 ug/L Fluorene ND 0.10 01/10/17 09:46 01/10/17 22:18 86-73-7 ug/L 1 ug/L Indeno(1,2,3-cd)pyrene ND 0.10 1 ug/L 2-Methylnaphthalene ND 0.10 1 Naphthalene ND uig/L 0.10 1 Phenanthrene ND ug/L 0.10 1 Pyrene ND ug/L 0.10 1 Surrogates 2-Fluorobiphenyl (S) 86 %. 25-150 Terphenyl-d14 (S) 79 %. 25-150 1 01/10/17 09:46 01/10/17 22:18 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 5.0 4.0 1 01/10/17 13:46 67-64-1 C9Acetone ug/L Benzene ND 0.50 01/10/17 13:46 71-43-2 ug/L 1 Bromodichloromethane ND 0.50 1 01/10/17 13:46 75-27-4 ug/L Bromoform ND 0.50 1 01/10/17 13:46 75-25-2 ug/L Bromomethane ND 0.50 01/10/17 13:46 74-83-9 ug/L 1 2-Butanone (MEK) ND 2.0 01/10/17 13:46 78-93-3 ug/L 1 Carbon disulfide ND ug/L 1.0 1 01/10/17 13:46 75-15-0 L3 Carbon tetrachloride ND 0.50 1 01/10/17 13:46 56-23-5 ug/L Chlorobenzene ND 0.50 1 01/10/17 13:46 108-90-7 ug/L Chloroethane ND ug/L 0.50 1 01/10/17 13:46 75-00-3 Chloroform ND ug/L 0.50 1 01/10/17 13:46 67-66-3 01/10/17 13:46 74-87-3 Chloromethane ND ug/L 0.50 1 1,2-Dibromo-3-chloropropane 0.20 01/10/17 13:46 96-12-8 ND ug/L 1 Dibromochloromethane ND ug/L 0.50 1 01/10/17 13:46 124-48-1 1,2-Dibromoethane (EDB) ND 1.0 01/10/17 13:46 106-93-4 ug/L 1 Dichlorodifluoromethane ND 1.0 01/10/17 13:46 75-71-8 ug/L 1 1,1-Dichloroethane ND 0.50 1 01/10/17 13:46 75-34-3 ug/L 1,2-Dichloroethane ND ug/L 0.50 1 01/10/17 13:46 107-06-2

REPORT OF LABORATORY ANALYSIS

0.50

1.0

0.50

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01/10/17 13:46 75-35-4

01/10/17 13:46 156-59-2

01/10/17 13:46 156-60-5

01/10/17 13:46 78-87-5

01/10/17 13:46 10061-01-5

01/10/17 13:46 10061-02-6

01/10/17 13:46 100-41-4

01/10/17 13:46 591-78-6

01/10/17 13:46 98-82-8

01/10/17 13:46 79-20-9

01/10/17 13:46 75-09-2

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333

01/10/17 13:46 2037-26-5



ANALYTICAL RESULTS

Project:

Toluene-d8 (S)

Date: 01/18/2017 12:38 PM

PUMA TERMINAL MW SAMPLING

101

%.

Pace Project No.: 2048222

Sample: MW-M14 Lab ID: 2048222006 Collected: 01/05/17 11:34 trix: Water DF Parameters Results Units Report Limit CAS No. Qual Analytical Method: EPA 5030B/8260 8260 MSV Low Level ND 4-Methyl-2-pentanone (MIBK) ug/L 1.0 01/10/17 13:46 108-10-1 Methyl-tert-butyl ether 1.9 ug/L 0.50 01/10/17 13:46 1634-04-4 Styrene ND ug/L 1.0 1 01/10/17 13:46 100-42-5 1,1,2,2-Tetrachioroethane ND ug/L 0.50 1 01/10/17 13:46 79-34-5 Tetrachloroethene ND ug/L 0.50 1 01/10/17 13:46 127-18-4 Toluene ND ug/L 0.50 1 01/10/17 13:46 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 1 01/10/17 13:46 71-55-6 1,1,2-Trichloroethane ND ug/L 0.50 1 01/10/17 13:46 79-00-5 Trichloroethene ND 0.50 01/10/17 13:46 79-01-6 ug/L 1 Trichlorofluoromethane ND 0.50 01/10/17 13:46 75-69-4 ug/L 1 Vinyl chloride ND 0.50 1 01/10/17 13:46 75-01-4 ug/L m&p-Xylene ND 2.0 01/10/17 13:46 179601-23-1 ug/L 1 01/10/17 13:46 95-47-6 o-Xylene ND ug/L 1.0 1 Surrogates Dibromofluoromethane (S) 114 %. 72-126 1 01/10/17 13:46 1868-53-7 4-Bromofluorobenzene (S) 97 %. 68-124 1 01/10/17 13:46 460-00-4

79-119

1

Sample: FB-010517	Lab ID: 204	8222007	Collected: 01/05/1	7 11:38	Received: 01	1/05/17 12:50 N	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	15/8021						
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/12/17 13:46	i		
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/12/17 13:46	460-00-4		
8260 MSV Low Level	Analytical Meth	nod: EPA 50	30B/8260						
Acetone	18.5	ug/L	4.0	1		01/10/17 14:03	67-64-1	C9	
Benzene	ND	ug/L	0.50	1		01/10/17 14:03	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 14:03	75-27-4		
Bromoform	ND	ug/L	0.50	1		01/10/17 14:03	75-25-2		
Bromomethane	ND	ug/L	0.50	1		01/10/17 14:03	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 14:03	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 14:03	75-15-0	L3	
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 14:03	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 14:03	108-90-7		
Chloroethane	ND	ug/L	0.50	1		01/10/17 14:03	75-00-3		
Chloroform	ND	ug/L	0.50	1		01/10/17 14:03	67-66-3		
Chloromethane	ND	ug/L	0.50	1		01/10/17 14:03	3 74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 14:03	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 14:03	3 124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 14:03	106-93-4		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 14:03	3 75-71-8		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	75-34-3		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	107-06-2		



ANALYTICAL RESULTS

Project:

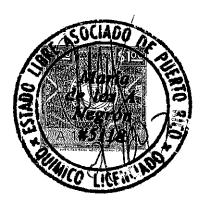
PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/18/2017 12:38 PM

2048222

Sample: FB-010517	Lab ID: 204	8222007	Collected: 01/05/1	7 11:38	Received: 0	1/05/17 12:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 14:0	3 75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 14:0	3 156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 14:03	3 156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 14:0	3 78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 14:0	3 10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 14:0	3 10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 14:0	3 100-41-4		
2-Hexanone	ND	ug/L	1.0	1		01/10/17 14:0	3 591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 14:0	3 98-82-8		
Methyl acetate	ND	ug/L	2.0	1		01/10/17 14:0	3 79-20-9		
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 14:0	3 75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 14:0	3 108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 14:0	3 1634-04-4		
Styrene	ND	ug/L	1.0	1		01/10/17 14:0	3 100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 14:0	3 79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 14:0	3 127-18-4		
Toluene	ND	ug/L	0.50	1		01/10/17 14:0	3 108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 14:0	3 71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 14:0	3 79-00-5	•	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 14:0	3 79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 14:0	3 75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 14:0	3 75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 14:0	3 179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/10/17 14:0	3 95-47-6		
Surrogates		5							
Dibromofluoromethane (S)	114	%.	72-126	1		01/10/17 14:0	3 1868-53-7		
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/10/17 14:0	3 460-00-4		
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 14:0	3 2037-26-5		





Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

QC Batch:

71889

Analysis Method:

EPA 8015/8021

QC Batch Method:

EPA 8015/8021

Analysis Description:

8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples:

2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

METHOD BLANK: 301021

Matrix: Water

Associated Lab Samples:

2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

Blank

Reporting Limit

Parameter

Units

Result ND

Analyzed 50.0 01/12/17 10:39

Qualifiers

Gasoline Range Organics 4-Bromofluorobenzene (S) ug/L %.

85

01/12/17 10:39 44-148

LABORATORY CONTROL SAMPLE: 301022

Parameter

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

MS

93

92

Gasoline Range Organics 4-Bromofluorobenzene (S) ug/L %.

Units

2048222003

Result

500

86 90 61-136

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

301348

ND

MSD Spike

Conc.

500

492

44-148

Parameter

Units

MS Spike Conc.

500

MS Result

301349

430

MSD Result % Rec

476

MSD % Rec

% Rec Limits RPD RPD

> 3 20

Max

Qual

90 15-147 92 44-148

Gasoline Range Organics 4-Bromofluorobenzene (S)

ug/L %.

Date: 01/18/2017 12:38 PM

REPORT OF LABORATORY ANALYSIS

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

QC Batch:

71614

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description:

7470 Mercury

Associated Lab Samples:

2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299676

Matrix: Water

Associated Lab Samples:

2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Blank

Reporting

Parameter

Units

Result

Limit

Analyzed

Qualifiers

Mercury

ug/L

ND

0.20 01/09/17 19:05

LABORATORY CONTROL SAMPLE: 299677

Parameter

Parameter

Date: 01/18/2017 12:38 PM

Units

ug/L

Spike Conc.

MS

LCS

LCS

% Rec Limits

Mercury

Units ug/L

Result

% Rec

80-120

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

299678

MSD

299679

1.0

MSD

103

MSD

% Rec

Max

2048222003 Spike Result Conc.

Spike Conc.

MS Result 1.0

% Rec

MS

% Rec

101

Limits

RPD RPD

Qual

Mercury

ND

Result 1.0

102

75-125

20

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

QC Batch:

71676

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description:

7470 Mercury Dissolved

Associated Lab Samples:

2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299994

Matrix: Water

Associated Lab Samples:

2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Blank

Reporting

Parameter

Units

Result

Limit

Analyzed

102

Qualifiers

Mercury, Dissolved

ug/L

ND

0.20 01/10/17 17:57

LABORATORY CONTROL SAMPLE:

Parameter

Spike Conc. LCS

LCS Result % Rec % Rec Limits

Qualifiers

Mercury, Dissolved

Date: 01/18/2017 12:38 PM

Units ug/L

1.0

80-120

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

QC Batch:

71617

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3010

Analysis Description:

6020 MET

Associated Lab Samples:

2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299684 Associated Lab Samples:

Matrix: Water

2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/13/17 18:59	
Chromium	mg/L	ND	0.0010	01/13/17 18:59	
Lead	mg/L	ND	0.0010	01/13/17 18:59	
Vanadium	mg/L	ND	0.0050	01/13/17 18:59	

LABORATORY CONTROL SAMPLE:	299685					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	99	85-115	
Lead	mg/L	.02	0.019	96	84-115	
Vanadium	mg/L	.02	0.020	98	81-115	

MATRIX SPIKE & MATRIX SP	PIKE DUPLIC	CATE: 29968	6		299687							
			MS	MSD								
		2047753015	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	11.2 ug/L	.02	.02	0.023	0.022	61	55	80-120	5	20	M1
Chromium	mg/L	ND	.02	.02	0.017	0.017	82	83	80-120	1	20	
Lead	mg/L	ND	.02	.02	0.023	0.023	112	112	80-120	1	20	
Vanadium	mg/L	ND	.02	.02	0.018	0.017	84	83	80-120	1	20	

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

QC Batch:

71683

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3005A

Analysis Description:

6020 MET Dissolved

Associated Lab Samples:

2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 300010

Matrix: Water

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Chromium, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Lead, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Vanadium, Dissolved	ug/L	ND	5.0	01/13/17 19:15	

LABORATORY CONTROL SAMPLE:	300011	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	18.7	94	80-120	
Chromium, Dissolved	ug/L	20	20.4	102	80-120	
Lead, Dissolved	ug/L	20	20.2	10 1	80-120	
Vanadium, Dissolved	ug/L	20	24.5	123	80-120 L	_0

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

QC Batch:

71630

Analysis Method:

EPA 5030B/8260

QC Batch Method:

EPA 5030B/8260

Analysis Description:

8260 MSV Low Level

Associated Lab Samples:

2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

METHOD BLANK: 299869

Matrix: Water

Associated Lab Samples:

Date: 01/18/2017 12:38 PM

2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

	2001, 20-0222002, 2	Blank	Reporting	2000, 2040222000	, 20 /0222001
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1-Dichloroethane	ug/∟	ND	0.50	01/10/17 09:55	
1,1-Dichloroethene	ug/L	ND	0.50	01/10/17 09:55	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/10/17 09:55	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/10/17 09:55	
1,2-Dichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,2-Dichloropropane	ug/L	ND	0.50	01/10/17 09:55	
2-Butanone (MEK)	ug/L	ND	2.0	01/10/17 09:55	
2-Hexanone	ug/L	ND	1.0	01/10/17 09:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/10/17 09:55	
Acetone	ug/L	ND	4.0	01/10/17 09:55	
Benzene	ug/L	ND	0.50	01/10/17 09:55	
Bromodichloromethane	ug/L	ND	0.50	01/10/17 09:55	
Bromoform	ug/L	ND	0.50	01/10/17 09:55	
Bromomethane	ug/L	ND	0.50	01/10/17 09:55	
Carbon disulfide	ug/L	ND	1.0	01/10/17 09:55	
Carbon tetrachloride	ug/L	ND	0.50	01/10/17 09:55	
Chlorobenzene	ug/L	ND	0.50	01/10/17 09:55	
Chloroethane	ug/L	ND	0.50	01/10/17 09:55	
Chloroform	ug/L	ND	0.50	01/10/17 09:55	
Chloromethane	ug/L	ND	0.50	01/10/17 09:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/10/17 09:55	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/10/17 09:55	
Dibromochloromethane	ug/L	ND	0.50	01/10/17 09:55	
Dichlorodifluoromethane	ug/L	ND	1.0	01/10/17 09:55	
Ethylbenzene	ug/L	ND	0.50	01/10/17 09:55	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/10/17 09:55	
m&p-Xylene	ug/L	ND	2.0	01/10/17 09:55	
Methyl acetate	ug/L	ND	2.0	01/10/17 09:55	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/10/17 09:55	
Methylene Chloride	ug/L	ND	0.50	01/10/17 09:55	
o-Xylene	ug/L	ND	1.0	01/10/17 09:55	
Styrene	ug/L	ND	1.0	01/10/17 09:55	
Tetrachloroethene	ug/L	ND	0.50	01/10/17 09:55	
Toluene	ug/L	ND	0.50	01/10/17 09:55	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/10/17 09:55	
frans-1,3-Dichloropropene	ug/L	ND	0.50	01/10/17 09:55	
Trichloroethene	ug/L	ND	0.50	01/10/17 09:55	
Trichlorofluoromethane	ug/L	ND	0.50	01/10/17 09:55	
	<u> </u>				

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

METHOD BLANK: 299869

Matrix: Water

Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND ND	0.50	01/10/17 09:55	
4-Bromofluorobenzene (S)	%.	96	68-124	01/10/17 09:55	
Dibromofluoromethane (S)	%.	107	72-126	01/10/17 09:55	
Toluene-d8 (S)	%.	102	79-119	01/10/17 09:55	

LABORATORY CONTROL SAMPLE:	299870					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	 ug/L	50	54.9	110	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	49.4	99	15-179	
1,1,2-Trichloroethane	ug/L	50	46.8	94	58-144	
1,1-Dichloroethane	ug/L	50	56.2	112	63-129	
1,1-Dichloroethene	ug/L	50	56.0	112	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	48.0	96	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	48.9	98	52-161	
1,2-Dichloroethane	ug/L	50	50.4	101	57-148	
1,2-Dichloropropane	ug/L	50	53.0	106	66-128	
2-Butanone (MEK)	ug/L	50	54.6	109	32-183	
2-Hexanone	ug/L	50	46.6	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	48.8	98	26-171	
Acetone	ug/L	50	54.0	108	22-165	
Benzene	υg/L	50	55.9	112	62-131	
Bromodichloromethane	ug/L	50	47.6	95	69-132	
Bromoform	ug/L	50	42.9	86	35-166	
Bromomethane	ug/L	50	47.6	95	34-158	
Carbon disulfide	ug/L	50	74.4	149	31-128 L0	
Carbon tetrachloride	ug/L	50	51.2	102	54-144	
Chlorobenzene	ug/L	50	50.2	100	70-127	
Chloroethane	ug/L	50	39.3	79	17-195	
Chloroform	ug/L	50	51.3	103	73-134	
Chloromethane	ug/L	50	60.3	121	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.7	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	51.6	103	72-138	
Dibromochloromethane	ug/L	50	45.6	91	49-146	
Dichlorodifluoromethane	ug/L	50	51.3	103	10-179	
Ethylbenzene	ug/L	50	49.1	98	66-126	
Isopropylbenzene (Cumene)	ug/L	50	49.5	99	51-138	
m&p-Xylene	ug/L	100	101	101	65-129	
Methyl acetate	ug/L	50	51.3	103	20-142	
Methyl-tert-butyl ether	ug/L	50	50.2	100	37-166	
Methylene Chloride	ug/L	50	55.2	110	46-168	
o-Xylene	ug/L	50	48.1	96	65-124	
Styrene	ug/L	50	49.3	99	72-133	
Tetrachloroethene	ug/L	50	49.0	98	46-157	

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

BORATORY CONTROL SAMPL	E: 299870	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
luene	ug/L	50	52.3	105	69-126	
ns-1,2-Dichloroethene	ug/L	50	53.7	107	60-129	
ns-1,3-Dichloropropene	ug/L	50	51.0	102	59-149	
chioroethene	ug/L	50	52.2	104	67-132	
chlorofluoromethane	ug/L	50	55.1	110	39-171	
/I chloride	ug/L	50	44.5	89	27-149	
romofluorobenzene (S)	%.			97	68-124	
promofluoromethane (S)	%.			109	72-126	
uene-d8 (S)	%.			102	79-119	

MATRIX SPIKE & MATRIX SPIR	1	299872										
			MS	MSD								
		2048288001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	64.9	56.6	130	113	54-137	14	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	57.0	53.7	114	107	15-187	6	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	53.0	48.4	106	97	59-148	9	20	
1,1-Dichloroethane	ug/L	ND	50	50	64.1	55.4	128	111	59-133	15	20	
1,1-Dichloroethene	ug/L	ND	50	50	64.8	55.6	130	111	44-146	15	20	
1,2-Dibromo-3-	ug/L	ND	50	50	54.6	51.8	109	104	23-166	5	20	
chloropropane												
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	54.8	49.6	110	99	55-166	10	20	
1,2-Dichloroethane	ug/L	ND	50	50	56.3	50.6	113	101	56-154	11	20	
1,2-Dichloropropane	ug/L	ND	50	50	58.4	51.6	117	103	62-135		20	
2-Butanone (MEK)	ug/L	ND	50	50	67.3	59.2	135	118	20-205			
2-Hexanone	ug/L	ND	50	50	56.8	52.6	114	105	25-189			
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	58.4	53.7	117	107	23-184	8		
Acetone	ug/L	0.0078 mg/L	50	50	66.7	63.4	118	111	11-217	5	20	
Benzene	ug/L	ND	50	50	62.0	54.0	124	108	52-141	14	20	
Bromodichloromethane	ug/L	ND	50	50	53.5	47.2	107	94	70-134	12	20	
Bromoform	ug/L	ND	50	50	48.0	43.0	96	86	37-171	11	20	
Bromomethane	ug/L	ND	50	50	50.7	45.9	101	92	34-155	10	20	
Carbon disulfide	ug/L	ND	50	50	91.4	73.6	183	147	28-130	22	20	M0,R1
Carbon tetrachloride	ug/L	ND	50	50	56.6	48.4	113	97	48-146	16	20	
Chlorobenzene	ug/L	ND	50	50	56.2	49.1	112	98	67-129	13	20	
Chloroethane	ug/L	ND	50	50	54.8	48.0	110	96	12-192	13	20	
Chloroform	ug/L	ND	50	50	58.1	50.9	116	102	66-143	13	20	
Chloromethane	ug/L	ND	50	50	53.4	45.2	107	90	14-155	17	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.2	53.2	122	106	56-141	14	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	56.9	49.5	114	99	70-139	14	20	
Dibromochloromethane	ug/L	ND	50	50	50.4	44.9	101	90	50-150	12	20	
Dichlorodifluoromethane	ug/L	ND	50	50	60.8	52.0	122	104	10-173	16	20	
Ethylbenzene	ug/L	ND	50	50	55.3	48.7	111	97	57-135	13	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	55.6	52.7	111	105	40-146	5 5	20	

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Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

QC Batch:

71577

Analysis Method:

EPA 8015B Modified

QC Batch Method:

EPA 3535

Analysis Description:

EPA 8015 ORO

Associated Lab Samples:

2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299594

Matrix: Water

Date: 01/18/2017 12:38 PM

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/09/17 15:11	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/09/17 15:11	
n-Pentacosane (S)	%.	49	16-137	01/09/17 15:11	
o-Terphenyl (S)	%.	58	10-121	01/09/17 15:11	

LABORATORY CONTROL SAMPLE:	299595					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L		0.29	73	10-115	
n-Pentacosane (S)	%.			55	16-137	
o-Terphenyl (S)	%.			68	10-121	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

QC Batch:

71665

Analysis Method:

EPA 8270 by SIM

QC Batch Method: EPA 3510

Analysis Description:

8270 Water by SIM MSSV

Associated Lab Samples:

2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299959

Matrix: Water

Associated Lab Samples:

Date: 01/18/2017 12:38 PM

2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	- ND	0.10	01/10/17 15:39	-
Acenaphthene	ug/L	ND	0.10	01/10/17 15:39	
Acenaphthylene	ug/L	ND	0.10	01/10/17 15:39	
Anthracene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(a)anthracene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(a)pyrene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Chrysene	ug/L	ND	0.10	01/10/17 15:39	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/10/17 15:39	
Fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Fluorene	ug/L	ND	0.10	01/10/17 15:39	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/10/17 15:39	
Naphthalene	ug/L	ND	0.10	01/10/17 15:39	
Phenanthrene	ug/L	ND	0.10	01/10/17 15:39	
Pyrene	ug/L	ND	0.10	01/10/17 15:39	
2-Fluorobiphenyl (S)	%.	82	25-150	01/10/17 15:39	
Terphenyl-d14 (S)	%.	86	25-150	01/10/17 15:39	

LABORATORY CONTROL SAMPLE	E: 299960					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L		3.7	92	35-150	
Acenaphthene	ug/L	4	3.7	91	35-150	
Acenaphthylene	ug/L	4	3.6	91	35-150	
Anthracene	ug/L	4	4.4	111	35-150	
Benzo(a)anthracene	ug/L	4	3.8	95	35-150	
Benzo(a)pyrene	ug/L	4	3.5	88	35-150	
Benzo(b)fluoranthene	ug/L	4	3.5	88	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.3	107	35-150	
Benzo(k)fluoranthene	ug/L	4	3,5	88	35-150	
Chrysene	ug/L	4	3.5	89	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.7	117	35-150	
Fluoranthene	ug/L	4	3.5	86	35-150	
Fluorene	ug/L	4	3.5	89	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.5	112	35-150	
Naphthalene	ug/L	4	3.4	84	35-150	
Phenanthrene	ug/L	4	3.9	97	35-150	
Pyrene	ug/L	4	3.4	85	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/18/2017 12:38 PM

2048222

LABORATORY CONTROL SAMPLE:	299960	•				
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			117	25-150	
Terphenyl-d14 (S)	% .			114	25-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

2048222

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N

Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71629

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71745

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71749

[1] Insufficient sample volume to perform MS/MSD analysiws.

ANALYTE QUALIFIERS

Date: 01/18/2017 12:38 PM

C9 Common Laboratory Contaminant.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in L3

associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL MW SAMPLING

Pace Project No.:

Date: 01/18/2017 12:38 PM

2048222

Lab ID	Sample ID	QC Batch Method	QC Batch Method QC Batch Analytical				
048222002	EB-010517	EPA 3535	71577	EPA 8015B Modified	71629		
048222003	MW-48A	EPA 3535	71577	EPA 8015B Modified	71629		
048222004	MW-109A	EPA 3535	71577	EPA 8015B Modified	71629		
048222005	DUP005	EPA 3535	71577	EPA 8015B Modified	71629		
048222006	MW-M14	EPA 3535	71577	EPA 8015B Modified	71629		
048222001	TB-010517	EPA 8015/8021	71889				
048222002	EB-010517	EPA 8015/8021	71889				
048222003	MW-48A	EPA 8015/8021	71889				
048222004	MW-109A	EPA 8015/8021	71889				
048222005	DUP005	EPA 8015/8021	71889				
048222006	MW-M14	EPA 8015/8021	71889				
048222007	FB-010517	EPA 8015/8021	71889				
048222002	EB-010517	EPA 3010	71617	EPA 6020	71656		
048222003	MW-48A	EPA 3010	71617	EPA 6020	71656		
048222004	MW-109A	EPA 3010	71617	EPA 6020	71656		
048222005	DUP005	EPA 3010	71617	EPA 6020	71656		
048222006	MW-M14	EPA 3010	71617	EPA 6020	71656		
048222002	EB-010517	EPA 3005A	71683	EPA 6020	71749		
048222003	MW-48A	EPA 3005A	71683	EPA 6020	71749		
048222004	MW-109A	EPA 3005A	71683	EPA 6020	71749		
048222005	DUP005	EPA 3005A	71683	EPA 6020	71749		
048222006	MW-M14	EPA 3005A	71683	EPA 6020	71749		
048222002	EB-010517	EPA 7470	71614	EPA 7470	71654		
048222003	MW-48A	EPA 7470	71614	EPA 7470	71654		
048222004	MW-109A	EPA 7470	71614	EPA 7470	71654		
048222005	DUP005	EPA 7470	71614	EPA 7470	71654		
048222006	MW-M14	EPA 7470	71614	EPA 7470	71654		
048222002	EB-010517	EPA 7470	71676	EPA 7470	71753		
048222003	MW-48A	EPA 7470	71676	EPA 7470	71753		
048222004	MW-109A	EPA 7470	71676	EPA 7470	71753		
048222005	DUP005	EPA 7470	71676	EPA 7470	71753		
048222006	MW-M14	EPA 7470	71676	EPA 7470	71753		
048222002	EB-010517	EPA 3510	71665	EPA 8270 by SIM	71745		
048222003	MW-48A	EPA 3510	71665	EPA 8270 by SIM	71745		
048222004	MW-109A	EPA 3510	71665	EPA 8270 by SIM	71745		
048222005	DUP005	EPA 3510	71665	EPA 8270 by SIM	71745		
048222006	MW-M14	EPA 3510	71665	EPA 8270 by SIM	71745		
048222001	TB-010517	EPA 5030B/8260	71630				
048222002	EB-010517	EPA 5030B/8260	71630				
048222003	MW-48A	EPA 5030B/8260	71630				
048222004	MW-109A	EPA 5030B/8260	71630				
048222005	DUP005	EPA 5030B/8260	71630				
048222006	MW-M14	EPA 5030B/8260	71630				
048222007	FB-010517	EPA 5030B/8260	71630				

HAIN-OF-CUSTODY / Analytical Request Document Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

	ction A 2048222				l					Secti		mation												Pag	e: .		1	of /		
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	Required Client Information MATR	ix Codes X / CODE	to left)	OMP)		COLL	ECTED					Pres	ervati	ives		N %				in one o										
ITEM#	Drinking N Water Waste Wi Product Soil/Soild Oil Oil (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE Other	WT	MATRIX CODE (see valid cades to left)	YPE (C	COMPUSTAL		COMPC		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved H ₂ SO ₄	HNO ₃	NaOH	Na ₂ S ₂ O ₃ Mothanal	Wemanol	∞	27'	DRO / 080 4015	7	7	Dissolved Motors					Residual Chlorine (Y/N)	\mathcal{L}	Le Project		
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age 43 of 45		RIGINA	L					ne of SAMPLE		_		olo_	-		. 44	1	DATE	Sign	ted	,		/ A			Te∕mp in °C		Received on Ice (Y/N)	Custody Sealed Cook (Y/N)	Integration	(Y/N)
Ü	on ↑Important Note: By signing this form you are acc	epting Pace's N	NET 30	day pay	ymeni terms a						nvoices	not pai	d within	 30 day	/s.		(MM/I	DD/YY	Y): Q	1/(25/	1)					_,	 7, 15-May		

Pace Analytical*

Sample Condition Upon Receipt W0#:2048222

PM: JAR1

Due Date: 01/19/17

(Calle Mrginai Btq A-10 Guaynabo, PR 00969	,		Pro	ect#:	CLIENT: 98-ARCAD	ISPR
Courier:	☐ Pace Courier	☐ Hired Courier	☐ Fed X	□ UF	ès 🗆	DHL	☐ USPS /☐ Customer	r □ Other
Custody Se	eal on Cooler/Box Pr	esent: [see	cocl				Custody Seals intact:	□Yes □No
Theromete Used:	Therm Fis	sher IR 6	Type of Ice	: (v	/et Blue	None	Samples on ice: [se	ee COC]
Cooler T	Femperature: [see C	OC] Tem	np should be a	ibove fr	reezing to 6		Date and Initials of person contents:	examining
Temp must b	oe measured from Tem	perature blank when	present	سر.	Comments	:		
Temperatur	re Blank Present"?		□Yes ⊠No	□N/A	1			
Chain of Cu	ustody Present:		Zyes □No	□N/A	2			
Chain of Cu	ustody Complete:		□Yes □No	□N/A	3			
Chain of Cu	ustody Relinquished:		∐Yes □No	□n/a	4			
Sampler Na	ame & Signature on	COC:	ZiYes □No	□n/A	5			
Samples Ar	rived within Hold Tir	me:	Yes □No	□n/a	6			
Sufficient V	olume:		∐Yes □No	□n/A	7			
Correct Cor	ntainers Used:		∠Yes □No	□n/a	8			
Filtered vol.	Rec. for Diss. tests		□Yes □No	∕ N/A	9			
Sample Lab	els match COC:		☑Yes □No	□n/a	10			
	rs received within m ry and/or expiration		ZYes □No	□N⁄A	11			
	rs needing chemica ed (except VOA, col		□Yes □No	[]WA	12			
	rs preservation chec with EPA recomme		□Yes □No	ZN/A			eserative added?Yes _ rd lot no.: HNO3	⊒No H2SO4
Headspace	in VOA Vials (>6mi	m):	□Yes □No	A/N⊑ز	14			
Trip Blank P	Present:		,⊿Yes □No		15			
Client Notil	fication/ Resolution	n:		, , , ,.				
Person Con	tacted:						Date/Time:	
Comments/	Resolution:			<u>-</u>				
								

Sample Condition Upon Receipt

Pace Analytical	1000 Riverbend, Blvd., Suite F St Rose, LA 70087		Project #	20
Courier:	☐ Hired Courier ☐ Fed	iU □ Xt	PS □ DHL	☐ USPS ☐ Customer ☐ Other Custody Seals intact: ☐ Yes ☐ No
Therometer	sher IR 6 Type o	of Ice:	Vet Blue None	Samples on ice: [see COC]
Cooler Temperature: [see C	OC] Temp should	d be above f	reezing to 6°C	Date and Initials of person examining contents:
Temp must be measured from Ten	aperature blank when present		Comments:	
Temperature Blank Present"?	□Yes	□No ÆŅIA	1	
Chain of Custody Present:	D v és	□No □N/A	2	
Chain of Custody Complete:	Yes	□No □N/A	3	
Chain of Custody Relinquished	Yes	□No □N/A	4	
Sampler Name & Signature on		□No □N/A	5	
Samples Arrived within Hold Til		□Np □N/A	6	
Sufficient Volume:	Yes	□No □N/A	7	
Correct Containers Used:	Yes	□No □N/A	8	
Filtered vol. Rec. for Diss. tests	□Yes	□No JN/A	9	
Sample Labels match COC:		□No □N/A	10	
All containers received within morecautionary and/or expiration	anafacturo's	□No □N/A		
All containers needing chemica been checked (except VOA, co		□No □N/A	12	
All containers preservation che compliance with EPA recomme	527	□No □N/A		oreserative added?YesNo cord lot no.: HNO3 H2SO4
Headspace in VOA Vials (>6m	m): □Yes	No DN/A	14	
Trip Blank Present:	Yes	□No	15	
Client Notification/ Resolutio	 n:			
Person Contacted:				Date/Time;
Comments/ Resolution:				
	<u> </u>			
		 		
×		·		



February 15, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 12, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Juan Redondo

juan.redondo@pacelabs.com

Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez

Marianela Mercado-Burgos







CERTIFICATIONS

00119

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Fiorida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202 Texas Commission on Env. Quality (NELAC): T104704405-09-TX U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048681001	TB-011217	Water	01/12/17 00:00	01/12/17 15:48
2048681002	EB-011217	Water	01/12/17 08:20	01/12/17 15:48
2048681003	MW-76B2	Water	01/12/17 09:41	01/12/17 15:48
2048681004	MW-76A	Water	01/12/17 10:35	01/12/17 15:48
2048681005	MW-13A	Water	01/12/17 12:45	01/12/17 15:48
2048681006	MW-13B2	Water	01/12/17 13:46	01/12/17 15:48
2048681007	MW-37A	Water	01/12/17 14:38	01/12/17 15:48
2048681008	FB-011217	Water	01/12/17 14:48	01/12/17 15:48



SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048681001	TB-011217	EPA 8015/8021	мнм	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048681002	EB-011217	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		ÉPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048681003	MW-76B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	мнв1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048681004	MW-76A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048681005	MW-13A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
048681006	MW-13B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
	•	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681007	MW-37A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	мнв1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681008	FB-011217	EPA 8015/8021	мнм	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR

Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72198

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.





Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Method:

EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client:

BBL Caribe / Arcadis PR

Date:

February 15, 2017

General Information:

8 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Method:

EPA 6020

Description: 6020 MET ICPMS

Client:

BBL Caribe / Arcadis PR

Date:

February 15, 2017

General Information:

6 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client:

BBL Caribe / Arcadis PR

Date:

February 15, 2017

General Information:

6 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Batch Comments:

Insufficient sample volume to perform MS/MSD analyses.

QC Batch: 72356





Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Method: EPA 7470
Description: 7470 Mercury

Client:

BBL Caribe / Arcadis PR

Date:

February 15, 2017

General Information:

6 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Method:

EPA 8270 by SIM

Client:

Description: 8270 MSSV PAH by SIM SEP

BBL Caribe / Arcadis PR

Date:

February 15, 2017

General Information:

6 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72204

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.





Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Method:

EPA 5030B/8260 Description: 8260 MSV Low Level

Client:

BBL Caribe / Arcadis PR

Date:

February 15, 2017

General Information:

8 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 72210

- L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
 - · LCS (Lab ID: 302518)
 - · Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72210

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048748001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 302519)
 - Carbon disulfide
- MSD (Lab ID: 302520)
 - · Carbon disulfide

R1: RPD value was outside control limits.

- MSD (Lab ID: 302520)
 - Bromomethane
 - · Carbon disulfide





Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

QC Batch: 72210

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048748001

R1: RPD value was outside control limits.

Chloroethane

Additional Comments:

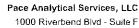
Analyte Comments:

QC Batch: 72210

C9: Common Laboratory Contaminant.

- EB-011217 (Lab ID: 2048681002)
 - Acetone
- FB-011217 (Lab ID: 2048681008)
 - Acetone
- MW-13A (Lab ID: 2048681005)
 - Acetone
- MW-13B2 (Lab ID: 2048681006)
 - Acetone
- MW-76A (Lab ID: 2048681004)
 - Acetone
- MW-76B2 (Lab ID: 2048681003)
 - Acetone
- TB-011217 (Lab ID: 2048681001)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.



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ANALYTICAL RESULTS

Project:

o-Xylene

Date: 02/15/2017 12:15 PM

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Sample: TB-011217 Lab ID: 2048681001 Collected: 01/12/17 00:00 Matrix: Water Prepared Parameters Results Units Report Limit DE Analyzed CAS No. Qual Analytical Method: EPA 8015/8021 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics ND ug/L 50.0 01/18/17 21:00 Surrogates 4-Bromofluorobenzene (S) 98 %. 44-148 01/18/17 21:00 460-00-4 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 22.2 ug/L 4.0 1 01/17/17 15:50 67-64-1 C9 Benzene ND ug/L 0.50 1 01/17/17 15:50 71-43-2 0.67 01/17/17 15:50 75-27-4 Bromodichloromethane ug/L 0.50 1 01/17/17 15:50 75-25-2 Bromoform ND ug/L 0.50 1 01/17/17 15:50 74-83-9 Bromomethane ND 0.50 ug/L 1 01/17/17 15:50 78-93-3 2-Butanone (MEK) ND ug/L 2.0 Carbon disulfide ND 01/17/17 15:50 75-15-0 13 ug/L 1.0 Carbon tetrachloride ND 01/17/17 15:50 56-23-5 0.50 ug/L 1 Chlorobenzene ND 01/17/17 15:50 108-90-7 ug/L 0.50 1 Chloroethane ND ug/L 0.50 1 01/17/17 15:50 75-00-3 Chloroform 3.4 0.50 01/17/17 15:50 67-66-3 ug/L 1 Chloromethane ND 0.50 01/17/17 15:50 74-87-3 ug/L 1 1,2-Dibromo-3-chloropropane 01/17/17 15:50 96-12-8 ND ug/L 0.20 1 ug/L Dibromochloromethane ND 0.50 1 01/17/17 15:50 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 01/17/17 15:50 106-93-4 01/17/17 15:50 75-71-8 Dichlorodifluoromethane ND uq/L 1.0 1 1,1-Dichloroethane ND 01/17/17 15:50 75-34-3 ug/L 0.50 1 1,2-Dichloroethane ND 0.50 01/17/17 15:50 107-06-2 ug/L 1 1,1-Dichloroethene ND 0.50 01/17/17 15:50 75-35-4 ug/L cis-1,2-Dichloroethene ND ug/L 1.0 1 01/17/17 15:50 156-59-2 trans-1,2-Dichloroethene ND 0.50 01/17/17 15:50 156-60-5 ug/L 1 1,2-Dichloropropane ND 0.50 1 01/17/17 15:50 78-87-5 ug/L cis-1,3-Dichloropropene ND 0.50 1 01/17/17 15:50 10061-01-5 ug/L 01/17/17 15:50 10061-02-6 trans-1,3-Dichloropropene ND ug/L 0.50 1 Ethylbenzene ND ug/L 0.50 1 01/17/17 15:50 100-41-4 01/17/17 15:50 591-78-6 2-Hexanone ND ug/L 1.0 1 Isopropylbenzene (Cumene) ND ug/L 1.0 1 01/17/17 15:50 98-82-8 01/17/17 15:50 79-20-9 Methyl acetate ND ug/L 2.0 1 Methylene Chloride 0.50 01/17/17 15:50 75-09-2 ND ug/L 1 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 01/17/17 15:50 108-10-1 NΩ Methyl-terf-butyl ether 0.50 01/17/17 15:50 1634-04-4 ug/L 1 Styrene ND 01/17/17 15:50 100-42-5 ug/L 1.0 1 1,1,2,2-Tetrachloroethane ND 0.50 01/17/17 15:50 79-34-5 ug/L 1 Tetrachloroethene ND ug/L 0.501 01/17/17 15:50 127-18-4 Toluene ND ug/L 0.50 1 01/17/17 15:50 108-88-3 1,1,1-Trichloroethane ND 0.50 01/17/17 15:50 71-55-6 ug/L 1 1,1,2-Trichloroethane ND 0.50 01/17/17 15:50 79-00-5 1 ug/L Trichloroethene ND ug/L 0.50 01/17/17 15:50 79-01-6 1 Trichlorofluoromethane ND ug/L 0.50 1 01/17/17 15:50 75-69-4 Vinyl chloride ND 0.50 1 01/17/17 15:50 75-01-4 ug/L m&p-Xylene NΩ ug/L 2.0 1 01/17/17 15:50 179601-23-1

REPORT OF LABORATORY ANALYSIS

ND

ug/L

01/17/17 15:50 95-47-6

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ANALYTICAL RESULTS

ject:
 J

PUMA TERMINAL MS SAMPLING

Pace Project No.:

Date: 02/15/2017 12:15 PM

2048681

Pace Project No.: 2048681					12	ANIAD	\ * /	
Sample: TB-011217	Lab ID: 20	48681001	Collected: 01/	12/17 00:0	0 Receiv	STATE OF THE STATE	x: Water	
Parameters	Results	Units	Report Lin	nit DF	Prepared	e liens	CAS No.	Qual
8260 MSV Low Level	Analytical Me	ethod: EPA 50	030B/8260					
Surrogates								
Dibromofluoromethane (S)	107	%.	72-1			01/17/17 15:50		
4-Bromofluorobenzene (S) Toluene-d8 (S)	95 99	%. %.	68-1 79-1			01/17/17 15:50		
Tolderie-do (S)	99	76.	79-	19 1		01/17/17 15:50	2037-20-5	
Sample: EB-011217	Lab ID: 20	48681002	Collected: 01/	12/17 08:2	0 Received: 01	1/12/17 15:48 N	//atrix: Water	
Parameters	Results	Units	Report Lin	nit DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Me	ethod: EPA 8	015B Modified P	eparation	Method: EPA 3538	5		
Diesel Range Organic (C10-C28)	ND	mg/L	n	.50 1	01/17/17 09:23	01/18/17 16:35		
Oil Range Organics (>C28-C40)	ND	mg/L		1.0 1		01/18/17 16:35		
Surrogates		•						
n-Pentacosane (S)	57	%.	16-1	37 1	01/17/17 09:23	01/18/17 16:35	629-99-2	
o-Terphenyl (S)	58	%.	10-1	21 1	01/17/17 09:23	01/18/17 16:35	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Me	ethod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	5	0.0 1		01/18/17 21:27		
4-Bromofluorobenzene (S)	97	%.	44-1	48 1		01/18/17 21:27	460-00-4	
6020 MET ICPMS	Analytical Me	ethod: EPA 6	020 Preparation	Method: El	PA 3010			
Arsenic	ND	mg/L	0.00	10 1	01/17/17 06:56	02/11/17 14:03	7440-38-2	
Chromium	ND	mg/L	0.00	10 1	01/17/17 06:56	02/11/17 14:03	7440-47-3	
Lead	ND	mg/L	0.00	10 1	01/17/17 06:56	02/11/17 14:03	7439-92-1	
Vanadium	ND	mg/L	0.00	50 1	01/17/17 06:56	02/11/17 14:03	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Me	ethod: EPA 6	020 Preparation	Method: E	PA 3005A			
Arsenic, Dissolved	ND	ug/L		1.0 1	01/18/17 10:15	02/11/17 13:28	7440-38-2	
Chromium, Dissolved	ND	ug/L		1.0 1		02/11/17 13:28		
Lead, Dissolved	ND	ug/L		1.0 1		02/11/17 13:28		
Vanadium, Dissolved	ND	ug/L		5.0 1	01/18/17 10:15	02/11/17 13:28	7440-62-2	
7470 Mercury	Analytical Me	ethod: EPA 7	470 Preparation	Method: E	PA 7470			
Mercury	ND	ug/L	0	.20 1	01/18/17 10:01	01/19/17 11:06	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Me	ethod: EPA 7	470 Preparation	Method: E	PA 7470			
Mercury, Dissolved	ND	ug/L	0	.20 1	01/18/17 10:15	01/19/17 12:15	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Me	ethod: EPA 8	270 by SIM Prep	aration Me	thod: EPA 3510			
Acenaphthene	ND	ug/L	0	.10 1	01/17/17 10:16	01/17/17 20:35	83-32-9	
Acenaphthylene	ND	ug/L	0	.10 1	01/17/17 10:16	01/17/17 20:35	208-96-8	
Anthracene	ND	ug/L	0	.10 1	01/17/17 10:16	01/17/17 20:35	120-12-7	
Benzo(a)anthracene	ND	ug/L		.10 1		01/17/17 20:35		
Benzo(a)pyrene	ND	ug/L	0	.10 1	01/17/17 10:16	01/17/17 20:35	50-32-8	

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MS SAMPLING

4-Methyl-2-pentanone (MIBK)

Date: 02/15/2017 12:15 PM

20/19691

Pace Project No.: 2048681					الثيرا	*XXXXXX	X + 7	
Sample: EB-011217	Lab ID: 204	48681002	Collected: 01/12/1	7 08:20) Receive.	112111 1 18	Water	
Parameters	Results	Units	Report Limit	DF	Prepared	COALICE	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Me	thod: EPA 8	270 by SIM Preparati	ion Meti	hod: EPA 3510			
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	76	%.	25-150	1	01/17/17 10:16	01/17/17 20:35	321-60-8	
Terphenyl-d14 (S)	76	%.	25-150	1	01/17/17 10:16	01/17/17 20:35	1718-51-0	
8260 MSV Low Level	Analytical Me	thod: EPA 5	030B/8260					
Acetone	16.0	ug/L	4.0	1		01/17/17 16:08	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 16:08	71-43-2	
Bromodichloromethane	1.1	ug/L	0.50	1		01/17/17 16:08	75-27 - 4	
Bromoform	ND	ug/L	0.50	1		01/17/17 16:08	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 16:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 16:08	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 16:08	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 16:08	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 16:08	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 16:08	75-00-3	
Chloroform	4.8	ug/L	0.50	1		01/17/17 16:08	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 16:08	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 16:08	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 16:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 16:08	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 16:08	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 16:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 16:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:08	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 16:08	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 16:08	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 16:08	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 16:08		
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 16:08		
4-Methyl-2-pentagone (MIRK)	ND	ua/L	1 0	- 1		01/17/17 16:08	100 10 1	

REPORT OF LABORATORY ANALYSIS

1.0

1

ND

ug/L

01/17/17 16:08 108-10-1

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: EB-011217	Lab ID: 204	8681002	Collected: 01/12/1	17 08:20	Reck (M/	Reco. Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 16:08	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 16:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 16:08	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 16:08	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 16:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:08		
Trichloroethene	ND	ug/L	0.50	1		01/17/17 16:08		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 16:08		
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 16:08		
m&p-Xylene	ND	ug/L ug/L	2.0	1		01/17/17 16:08		
o-Xylene	ND ND	ug/L	1.0	1		01/17/17 16:08		
Surrogates	ND	ugr	1.0	'		01/1//// 10.00	55-41-0	
Dibromofluoromethane (S)	109	%.	72-126	1		01/17/17 16:08	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/17/17 16:08		
Toluene-d8 (S)	100	%.	79-119	1		01/17/17 16:08		
Totalene-do (o)	100	76.	75-115	1		01/1/1/1 10.00	2037-20-3	
Sample: MW-76B2	Lab ID: 204	8681003	Collected: 01/12/	17 09:41	Received: 01	/12/17 15:48 N	1atrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	aration M	lethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	04/47/17 00:23	01/18/17 17:03		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/18/17 17:03		
Surrogates	ND	mg/L	1.0	'	01/1//1/ 09.23	01/10/17 17:05		
n-Pentacosane (S)	50	%.	16-137	1	∩1/17/17 ∩9·23	01/18/17 17:03	629-99-2	
o-Terphenyl (S)	50	%.	10-137	1		01/18/17 17:03		
o-respiresyr (3)	30	/6.	10-121	'	01/1/// 05.23	01/10/17 17.03	04-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/18/17 23:42		
4-Bromofluorobenzene (S)	98	%.	44-148	1		01/18/17 23:42	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EP	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:23	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:23	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:23	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:23	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation Met	thod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:32	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		02/11/17 13:32		
Lead, Dissolved	ND	ug/L	1.0	1		02/11/17 13:32		
Vanadium, Dissolved	ND	ug/L	5.0	1		02/11/17 13:32		
Tanadan palaban ya		29.L	5.0	'	27/10/11 10:10	JE 11.11 10.02		

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

1,1-Dichloroethane

1,2-Dichloroethane

Date: 02/15/2017 12:15 PM

Sample: MW-76B2 Lab ID: 2048681003 Collected: 01/12/17 09:41 latrix: Water Analyzed Parameters Results Units Report Limit DE Prepared CAS No. Qual Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury Mercury ND ug/L 0.20 01/18/17 10:01 01/19/17 11:13 7439-97-6 Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury, Dissolved (LF) Mercury, Dissolved ND 0.20 01/18/17 10:15 01/19/17 12:18 7439-97-6 ua/L Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 8270 MSSV PAH by SIM SEP Acenaphthene ND ug/L 0.10 01/17/17 10:16 01/17/17 20:55 83-32-9 Acenaphthylene ND ug/L 0.10 01/17/17 10:16 01/17/17 20:55 208-96-8 Anthracene ND ug/L 0.10 1 Benzo(a)anthracene ND ug/L 0.10 1 01/17/17 10:16 01/17/17 20:55 56-55-3 Benzo(a)pyrene ND ug/L 0.10 1 01/17/17 10:16 01/17/17 20:55 50-32-8 ND 01/17/17 10:16 01/17/17 20:55 205-99-2 Benzo(b)fluoranthene ug/L 0.10 1 ND 0.10 01/17/17 10:16 01/17/17 20:55 191-24-2 Benzo(g,h,i)perylene ug/L 1 Benzo(k)fluoranthene NΩ 0.10 207-08-9 ug/L 1 01/17/17 10:16 01/17/17 20:55 Chrysene ND ug/L 0.10 1 01/17/17 10:16 01/17/17 20:55 218-01-9 Dibenz(a,h)anthracene ND ug/L 0.10 1 01/17/17 10:16 01/17/17 20:55 53-70-3 Fluoranthene ND ug/L 0.10 1 01/17/17 10:16 01/17/17 20:55 206-44-0 Fluorene NΩ 0.10 01/17/17 10:16 01/17/17 20:55 86-73-7 ug/L 1 Indena(1,2,3-cd)pyrene ND 0.10 01/17/17 10:16 01/17/17 20:55 193-39-5 ug/L 1 2-Methylnaphthalene ND 0.10 01/17/17 10:16 01/17/17 20:55 91-57-6 ug/L 1 Naphthalene ND 0.10 01/17/17 10:16 01/17/17 20:55 91-20-3 ug/L 1 Phenanthrene ND 0.10 01/17/17 10:16 01/17/17 20:55 85-01-8 ug/L 1 Pyrene ND 0.10 01/17/17 10:16 01/17/17 20:55 129-00-0 ug/L 1 Surrogates 2-Fluorobiphenyl (S) 86 %. 25-150 01/17/17 10:16 01/17/17 20:55 321-60-8 Terphenyl-d14 (S) %. 25-150 88 1 01/17/17 10:16 01/17/17 20:55 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 5.7 ug/L 4.0 01/17/17 16:26 67-64-1 C9 1 ND 0.50 Benzene ug/L 1 01/17/17 16:26 71-43-2 Bromodichloromethane ND 0.50 ug/L 1 01/17/17 16:26 75-27-4 Bromoform ND 0.50 01/17/17 16:26 75-25-2 ug/L 1 Bromomethane ND 0.50 01/17/17 16:26 74-83-9 ug/L 1 2-Butanone (MEK) ND ug/L 2.0 1 01/17/17 16:26 78-93-3 Carbon disulfide ND ug/L 1.0 01/17/17 16:26 75-15-0 L3 Carbon tetrachloride ND ug/L 0.50 01/17/17 16:26 56-23-5 Chlorobenzene ND ug/L 0.50 01/17/17 16:26 108-90-7 Chloroethane ND ug/L 0.50 01/17/17 16:26 75-00-3 Chloroform ND ug/L 0.50 01/17/17 16:26 67-66-3 Chloromethane ND ug/L 0.50 01/17/17 16:26 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 01/17/17 16:26 96-12-8 Dibromochloromethane ND 0.50 ug/L 1 01/17/17 16:26 124-48-1 01/17/17 16:26 106-93-4 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 Dichlorodifluoromethane NΠ ug/L 1.0 1 01/17/17 16:26 75-71-8

REPORT OF LABORATORY ANALYSIS

0.50

0.50

1

1

MΩ

ND

ug/L

ug/L

01/17/17 16:26 75-34-3

01/17/17 16:26 107-06-2



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

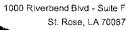
Date: 02/15/2017 12:15 PM

2048681

Pace Project No.: 2048681						STO TICEN		
Sample: MW-76B2	Lab ID: 204	8681003	Collected: 01/12/1	7 09:41	Received: 01	/12/17 ro.46 [*] M		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 16:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 16:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:26		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:26	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 16:26	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 16:26	591-78-6	
Isopropyibenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 16:26	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 16:26	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 16:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 16:26	108-10-1	
Methyl-terl-butyl ether	ND	ug/L	0.50	1		01/17/17 16:26	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 16:26	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 16:26		
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 16:26		
Toluene	ND	ug/L	0.50	1		01/17/17 16:26		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:26		
1.1.2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:26		
Trichloroethene	ND	ug/L	0.50	1		01/17/17 16:26		
		_	0.50	1		01/17/17 16:26		
Trichlorofluoromethane	ND	ug/L		1		01/17/17 16:26		
Vinyl chloride	ND	. ug/L	0.50	1				
m&p-Xylene	ND	ug/L	2.0			01/17/17 16:26		
o-Xylene	ND	ug/L	1.0	1		01/17/17 16:26	95-47-6	
Surrogates	110	%.	72-126	1		01/17/17 16:26	1868 53 7	
Dibromofluoromethane (S)	95	%.	68-124			01/17/17 16:26		
4-Bromofluorobenzene (S) Toluene-d8 (S)	101	%. %.	79-119	1 1		01/17/17 16:26		
Sample: MW-76A	Lab ID: 204	18681004	Collected: 01/12/	17 10:35	Received: 01	1/12/17 15:48 N	//atrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	aration N	Method: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:31		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1		01/18/17 17:31		
Surrogates	110	9/ =	1.0	•				
n-Pentacosane (S)	43	%.	16-137	1	01/17/17 09:23	01/18/17 17:31	629-99-2	
o-Terphenyl (S)	45	%.	10-121	1		01/18/17 17:31		
8021 GCV BTEX, MTBE, GRO	Analytical Met							
	·			4		04/40/47 00:00	1	
Gasoline Range Organics	ND	ug/L	50.0	1		01/19/17 00:09	ı	
Surrogates 4 Promofluorobonzono (S)	ne	%.	44-148	1		01/19/17 00:09	460-004	
4-Bromofluorobenzene (S)	98	70.	44-148	1		01/19/17 00:08	400-00-4	

REPORT OF LABORATORY ANALYSIS

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(504)469-0333



ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

2-Butanone (MEK)

Date: 02/15/2017 12:15 PM

Sample: MW-76A Lab ID: 2048681004 Collected: 01/12/17 10:35 Prepared Parameters Results Units DF CAS No. Report Limit Qual 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 01/17/17 06:56 02/11/17 14:27 7440-38-2 Arsenic ND mg/L 0.0010 ND Chromium 0.0010 1 01/17/17 06:56 02/11/17 14:27 7440-47-3 mg/L 01/17/17 06:56 02/11/17 14:27 7439-92-1 ND Lead mg/L 0.0010 1 0.0060 0.0050 01/17/17 06:56 02/11/17 14:27 7440-62-2 Vanadium mg/L 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND ug/L 1.0 01/18/17 10:15 02/11/17 13:36 7440-38-2 Chromium, Dissolved ND 1.0 01/18/17 10:15 02/11/17 13:36 7440-47-3 ug/L 1 Lead, Dissolved ND 1.0 01/18/17 10:15 02/11/17 13:36 7439-92-1 ug/L 1 Vanadium, Dissolved 5.8 ug/L 5.0 01/18/17 10:15 02/11/17 13:36 7440-62-2 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury ND 0.20 1 01/18/17 10:01 01/19/17 11:15 7439-97-6 ug/L 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury, Dissolved ND ug/L 0.20 01/18/17 10:15 01/19/17 12:20 7439-97-6 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 0.10 01/17/17 10:16 01/17/17 21:15 83-32-9 Acenaphthene ND ug/L Acenaphthylene ND ug/L 0.10 01/17/17 10:16 01/17/17 21:15 208-96-8 ND 0.10 01/17/17 10:16 01/17/17 21:15 120-12-7 Anthracene ug/L 1 Benzo(a)anthracene ND 0.10 01/17/17 10:16 01/17/17 21:15 56-55-3 ug/L Benzo(a)pyrene ND 0.10 01/17/17 10:16 01/17/17 21:15 50-32-8 ug/L ND 0.10 01/17/17 10:16 01/17/17 21:15 205-99-2 Benzo(b)fluoranthene ug/L 1 Benzo(g,h,i)perylene ND 0.10 01/17/17 10:16 01/17/17 21:15 191-24-2 ua/L 1 Benzo(k)fluoranthene ND 0.10 01/17/17 10:16 01/17/17 21:15 207-08-9 ug/L 1 Chrysene ND. 0.10 01/17/17 10:16 01/17/17 21:15 218-01-9 ug/L 1 Dibenz(a,h)anthracene ND ug/L 0.10 01/17/17 10:16 01/17/17 21:15 53-70-3 Fluoranthene ND 0.10 01/17/17 10:16 01/17/17 21:15 206-44-0 ug/L Fluorene ND ug/L 0.10 01/17/17 10:16 01/17/17 21:15 86-73-7 ug/L Indeno(1,2,3-cd)pyrene ND 0.10 01/17/17 10:16 01/17/17 21:15 2-Methylnaphthalene ND ug/L 0.10 1 01/17/17 10:16 01/17/17 21:15 91-57-6 Naphthalene ND ug/L 0.10 01/17/17 10:16 01/17/17 21:15 91-20-3 Phenanthrene 0.10 ND ug/L 1 01/17/17 10:16 01/17/17 21:15 85-01-8 Pyrene 01/17/17 10:16 01/17/17 21:15 129-00-0 ND ug/L 0.10 1 Surrogates 2-Fluorobiphenyl (S) 65 %. 25-150 1 01/17/17 10:16 01/17/17 21:15 321-60-8 Terphenyl-d14 (S) 68 %. 25-150 1 01/17/17 10:16 01/17/17 21:15 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 7.6 ug/L 4.0 1 01/17/17 16:44 67-64-1 C9Benzene ND ug/L 0.50 1 01/17/17 16:44 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/17/17 16:44 75-27-4 ND Bromoform ug/L 0.50 1 01/17/17 16:44 75-25-2 Bromomethane ND 0.50 01/17/17 16:44 74-83-9 ug/L 1 MΩ

REPORT OF LABORATORY ANALYSIS

2.0

1

ug/L

01/17/17 16:44 78-93-3



Pace Analytical Services, LLC 1000 Riverbend Blvd - Suite F

St. Rose, LA 70087 (504)469-0333

ANALYTICAL RESULTS

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

Date: 02/15/2017 12:15 PM

2048681

Sample: MW-76A	Lab ID: 204	8681004	Collected: 01/12/1	7 10:35	Received: Wat 142 Marix: Wat			er
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 16:44	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 16:44	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 16:44	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 16:44	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/17/17 16:44	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 16:44	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 16:44	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 16:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 16:44	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 16:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 16:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 16:44	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:44	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 16:44	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 16:44	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 16:44	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 16:44	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 16:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 16:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 16:44	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 16:44	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 16:44	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 16:44		
Toluene	ND	ug/L	0.50	1		01/17/17 16:44		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:44		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:44		
Trichloroethene	ND	ug/L	0.50	1		01/17/17 16:44		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 16:44		
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 16:44		
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 16:44		1
o-Xylene	ND	ug/L	1.0	1		01/17/17 16:44		•
Surrogates	.,,	α Ά. Γ	1.0			\$ 17 11 7 1 O. TT	55 11 0	
Dibromofluoromethane (S)	108	%.	72-126	1		01/17/17 16:44	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/17/17 16:44		
Toluene-d8 (S)	101	%.	79-119	1		01/17/17 16:44		

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

Date: 02/15/2017 12:15 PM

2048681

Sample: MW-13A	Lab ID: 204	8681005	Collected: 01/12/1	7 12:45	Recei (*/	and the s	элх: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	O LICENCE	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	hod: EPA 80	115B Modified Prepa	ration M	lethod: EPA 3535	;		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:59		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 17:59		
Surrogates		0.4	40.407		044747.00.00	04/40/47 47 50	000 00 0	
n-Pentacosane (S)	57	%.	16-137	1		01/18/17 17:59		
o-Terphenyl (S)	57	%.	10-121	1	01/1/17 09:23	01/18/17 17:59	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Metl	hod: EPA 80	15/8021					
Gasoline Range Organics	78.7	ug/L	50.0	1		01/19/17 00:36		
Surrogates	97	0/	44 149	1		01/10/17 00:26	460.00.4	
4-Bromofluorobenzene (S)	97	%.	44-148	,		01/19/17 00:36	400-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 60	20 Preparation Meth	nod: EP	A 3010			
Arsenic	0.0057	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:31	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	20 Preparation Meth	nod: EP	A 3005A			
Arsenic, Dissolved	1.6	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:40	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		02/11/17 13:40		
Lead, Dissolved	ND	ug/L	1.0	1		02/11/17 13:40		
Vanadium, Dissolved	ND	ug/L	5.0	1		02/11/17 13:40		
7470 Mercury	Analytical Met	hod: EPA 74	170 Preparation Met	nod: EP	A 7470			
Mercury	ND	ug/L	0.20	1		01/19/17 11:17	7439-97-6	
7470 Mercury, Dissolved (LF)		•	170 Preparation Met					
• • • • • •	ND		0.20	1		01/19/17 12:26	7420 07 6	
Mercury, Dissolved	ND	ug/L	0.20	'	01/16/17 10.15	01/19/1/ 12.20	7439-97-0	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SiM Preparat	ion Met	hod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	53-70-3	
Fluoranthene	ND	ug/L	0.10	1		01/17/17 21:35		
Fluorene	МÐ	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	91-20-3	
					01/17/17 10:16			



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St. Rose, LA 70087 (504)469-0333

ANALYTICAL RESULTS

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

m&p-Xylene

Date: 02/15/2017 12:15 PM

2048681

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 827	0 by SIM Preparati	on Mei	thod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	25-150	1		01/17/17 21:35		
Terphenyl-d14 (S)	73	%.	25-150	1	01/17/17 10:16	01/17/17 21:35	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 503	0B/8260					
Acetone	12.2	ug/L	4.0	1		01/17/17 17:01	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 17:01	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 17:01		
Bromoform	ND	ug/L	0.50	1		01/17/17 17:01	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:01	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:01	75-15 - 0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:01	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:01	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:01	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/17/17 17:01	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:01	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:01	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:01	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:01	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:01	591-78-6	
isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:01	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:01	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 17:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:01	108-10-1	
Methyl-tert-butyl ether	1.9	ug/L	0.50	1		01/17/17 17:01	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 17:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:01	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:01	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 17:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:01		
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:01	75-01-4	
. O	NIES	. n	6.6			04/47/47/47/04	470004 00	

REPORT OF LABORATORY ANALYSIS

2.0

ND

ug/L

01/17/17 17:01 179601-23-1



1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333

ANALYTICAL RESULTS

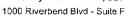
Γ	ect:

PUMA TERMINAL MS SAMPLING

Date: 02/15/2017 12:15 PM

2048681

Pace Project No.: 2048681					/*		PLS	
Sample: MW-13A	Lab ID: 2048	8681005	Collected: 01/12/1	7 12:45	Received: .		(1) Vater	
Parameters	Results	Units	Report Limit	DF	Prepared	Allahead	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
o-Xylene	ND	ug/L	1.0	1		01/17/17 17:01	95-47-6	
Surrogates Dibromofluoromethane (S)	110	%.	72-126	1		01/17/17 17:01	1868.53.7	
4-Bromofluorobenzene (S)	94	%.	68-124	1		01/17/17 17:01		
Toluene-d8 (S)	99	%.	79-119	1		01/17/17 17:01		
Sample: MW-13B2	Lab ID: 204	8681006	Collected: 01/12/1	17 13:46	Received: 01	1/12/17 15:48	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	and: EPA 8	015B Modified Prepa	ration M	efhod: EPA 3535			
_	•		·				_	
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1		01/18/17 18:27		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 18:27	,	
n-Pentacosane (S)	52	%.	16-137	1	01/17/17 09:23	01/18/17 18:27	629-99-2	
o-Terphenyl (S)	56	%.	10-121	1	01/17/17 09:23	01/18/17 18:27	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 8	015/8021					
Gasoline Range Organics	500	ug/L	50.0	1		01/19/17 01:03	3	
Surrogates 4-Bromofluorobenzene (S)	104	%.	44-148	1		01/19/17 01:03	3 460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 6	020 Preparation Met	hod: EP/	A 3010			
Arsenic	0.0049	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:35	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Metl	hod: EPA 6	020 Preparation Met	hod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	3 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	3 7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:43	3 7440-62-2	
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:20	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:29	9 7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by StM Prepara	tion Metl	nod: EPA 3510			
Acenaphthene	0.16	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	4 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	4 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	8 01/17/17 21:54	4 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	6 01/17/17 21:54	4 56-55-3	



St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

Date: 02/15/2017 12:15 PM

2048681

Sample: MW-13B2	Lab ID: 204	8681006	Collected: 01/12/17 13:46 Re		Received.	117 18 8 M	eter	
Parameters	Results	Units	Report Limit	DF	Prepared	STEP WILEY	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparat	ion Meth	nod: EPA 3510			
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	91-57-6	
Naphthalene	0.24	ug/L	0.10	1		01/17/17 21:54		
Phenanthrene	ND	ug/L	0.10	1		01/17/17 21:54		
Pyrene	ND	ug/L	0.10	1		01/17/17 21:54		
Surrogates		-5-						
2-Fluorobiphenyl (S)	78	%.	25-150	1	01/17/17 10:16	01/17/17 21:54	321-60-8	
Terphenyl-d14 (S)	81	%.	25-150	1	01/17/17 10:16	01/17/17 21:54	1718-51-0	
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	10.3	ug/L	4.0	1		01/17/17 17:19	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 17:19		
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 17:19		
Bromoform	ND	ug/L	0.50	1		01/17/17 17:19		
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:19		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:19		
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:19		L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:19		
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:19		
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:19		
Chloroform	ND	ug/L	0.50	1		01/17/17 17:19		
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:19		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:19		
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:19		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:19		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:19		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:19		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:19		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:19		
		-						
cis-1,2-Dichloroethene trans-1,2-Dichloroethene	ND ND	ug/L ug/L	1.0 0.50	1 1		01/17/17 17:19 01/17/17 17:19		
1,2-Dichloropropane	ND ND	-	0.50	1		01/17/17 17:19		
cis-1,3-Dichloropropene	ND	ug/L ug/L	0.50	1		01/17/17 17:19		
trans-1,3-Dichloropropene	ND	-		1				
		ug/L	0.50			01/17/17 17:19		
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:19		
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:19		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:19		
Methylaga Chlorida	ND	ug/L	2.0	1		01/17/17 17:19		
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 17:19	75-09-2	

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

Sample: MW-13B2	Lab ID: 2048	8681006	Collected: 01/12/1	7 13:46	Received: M	2) Z 15/18/11		
Parameters	Results	Units	Report Limit	DF	Prepared	Mozelic	S No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260			·	·———	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:19	108-10-1	
Methyl-terf-butyl ether	14.5	ug/L	0.50	1		01/17/17 17:19	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 17:19	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:19	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:19	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 17:19	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:19	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:19	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:19	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 17:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 17:19		
Surrogates		•						
Dibromofluoromethane (S)	108	%.	72-126	1		01/17/17 17:19	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/17/17 17:19	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		01/17/17 17:19	2037-26-5	
Sample: MW-37A	Lab ID: 204	8681007	Collected: 01/12/1	17 14:38	Received: 01	/12/17 15:48 M	atrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 8	015B Modified Prepa	ration M	lethod: EPA 3535	i		
-	•		·					
Diesel Range Organic (C10-C28)	0.94	mg/L	0.50	1	01/17/17 09:23	01/18/17 18:55		
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40)	•		·		01/17/17 09:23			
Diesel Range Organic (C10-C28)	0.94	mg/L	0.50	1	01/17/17 09:23 01/17/17 09:23	01/18/17 18:55	629-99-2	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates	0.94 ND	mg/L mg/L	0.50	1 1	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	01/18/17 18:55 01/18/17 18:55		
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S)	0.94 ND 48	mg/L mg/L %. %.	0.50 1.0 16-137 10-121	1 1	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55		
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S)	0.94 ND 48 54	mg/L mg/L %. %.	0.50 1.0 16-137 10-121	1 1	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55		
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO	0.94 ND 48 54 Analytical Met	mg/L mg/L %. %. nod: EPA 8	0.50 1.0 16-137 10-121 015/8021	1 1 1	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55		
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	0.94 ND 48 54 Analytical Met	mg/L mg/L %. %. nod: EPA 8	0.50 1.0 16-137 10-121 015/8021	1 1 1	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55	84-15-1	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	0.94 ND 48 54 Analytical Mett 1740	mg/L mg/L %. %. nod: EPA 8 ug/L %.	0.50 1.0 16-137 10-121 015/8021 50.0	1 1 1 1 1 1	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 01:30	84-15-1	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth	mg/L mg/L %. %. nod: EPA 8 ug/L %.	0.50 1.0 16-137 10-121 015/8021 50.0 44-148	1 1 1 1 1 1 hod: EP/	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/19/17 01:30 01/19/17 01:30	84-15-1 460-00-4	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic	0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth	mg/L mg/L %. %. nod: EPA 8 ug/L %. nod: EPA 6 mg/L	0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met	1 1 1 1 1 1 hod: EP/	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/19/17 01:30 01/19/17 01:30	84-15-1 460-00-4 7440-38-2	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium	0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth 0.0014 ND	mg/L mg/L %. %. nod: EPA 8 ug/L %. nod: EPA 6 mg/L mg/L	0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met	1 1 1 1 1 1 hod: EP/	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 4 3010 01/17/17 06:56 01/17/17 06:56	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/19/17 01:30 01/19/17 01:30 02/11/17 14:38 02/11/17 14:38	84-15-1 460-00-4 7440-38-2 7440-47-3	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead	0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth 0.0014 ND ND	mg/L mg/L %. hod: EPA 8 ug/L %. hod: EPA 6 mg/L mg/L	0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met 0.0010 0.0010 0.0010	1 1 1 1 1 1 hod: EP/	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 4 3010 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/19/17 01:30 01/19/17 01:30 02/11/17 14:38 02/11/17 14:38 02/11/17 14:38	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium	0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth 0.0014 ND ND	mg/L mg/L %. hod: EPA 8 ug/L %. hod: EPA 6 mg/L mg/L mg/L	0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met 0.0010 0.0010 0.0010	1 1 1 1 1 1 hod: EP/ 1 1 1	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 4 3010 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/19/17 01:30 01/19/17 01:30 02/11/17 14:38 02/11/17 14:38	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth ND ND ND Analytical Meth	mg/L mg/L %. hod: EPA 8 ug/L %. hod: EPA 6 mg/L mg/L mg/L	0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met 0.0010 0.0010 0.0010 0.0050	1 1 1 1 1 hod: EP/ 1 1 1 hod: EP/	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/19/17 01:30 01/19/17 01:30 02/11/17 14:38 02/11/17 14:38 02/11/17 14:38	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth ND ND Analytical Meth ND	mg/L mg/L %. hod: EPA 8 ug/L %. hod: EPA 6 mg/L mg/L mg/L hod: EPA 6 ug/L	0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met 0.0010 0.0010 0.0010 0.0050 020 Preparation Met	1 1 1 1 1 1 1 1 1 1 1 1 1	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/19/17 01:30 01/19/17 01:30 02/11/17 14:38 02/11/17 14:38 02/11/17 14:38	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved Chromium, Dissolved	0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth ND ND ND Analytical Meth	mg/L mg/L %. hod: EPA 8 ug/L %. hod: EPA 6 mg/L mg/L mg/L	0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met 0.0010 0.0010 0.0010 0.0050	1 1 1 1 1 hod: EP/ 1 1 1 hod: EP/	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 4 3010 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 4 3005A 01/18/17 10:15 01/18/17 10:15	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 01:30 01/19/17 01:30 02/11/17 14:38 02/11/17 14:38 02/11/17 14:38 02/11/17 13:16 02/11/17 13:16	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2 7440-38-2 7440-47-3	
Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	0.94 ND 48 54 Analytical Meth 1740 112 Analytical Meth ND ND Analytical Meth ND	mg/L mg/L %. hod: EPA 8 ug/L %. hod: EPA 6 mg/L mg/L mg/L hod: EPA 6 ug/L	0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met 0.0010 0.0010 0.0010 0.0050 020 Preparation Met	1 1 1 1 1 1 1 1 1 1 1 1 1	01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 01/17/17 09:23 4 3010 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 01/17/17 06:56 4 3005A 01/18/17 10:15 01/18/17 10:15	01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/18/17 18:55 01/19/17 01:30 01/19/17 01:30 02/11/17 14:38 02/11/17 14:38 02/11/17 14:38	84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-38-2 7440-47-3 7439-92-1	



St. Rose, LA 70087

ANALYTICAL RESULTS

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

Sample: MW-37A

Date: 02/15/2017 12:15 PM

Lab ID: 2048681007

Collected: 01/12/17 14:38

Received:

(504)469-0333

Parameters	Results	Units	Report Limit	ÐF	Prepared	COZUCE	ÓAS No.	Qual
7470 Mercury	Analytical Meth	nod: EPA 747	0 Preparation Meti	nod: EF	PA 7470			
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:22	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 747	0 Preparation Met	hod: EF	PA 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:31	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 827	0 by SIM Preparat	ion Met	thod: EPA 3510			
Acenaphthene	0.53	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	83-32-9	
Acenaphthylene	0.15	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	206-44-0	
Fluorene	0.45	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	193-39-5	
2-Methylnaphthalene	33.9	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	91-57-6	
Naphthalene	41.4	ug/L	1.0	10	01/17/17 10:16	01/18/17 10:53	91-20-3	
Phenanthrene	0.20	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	129-00-0	
Surrogates		-						
2-Fluorobiphenyl (S)	71	%.	25-150	1	01/17/17 10:16	01/17/17 22:14	321-60-8	
2-Fluorobiphenyl (S)	48	%.	25-150	10	01/17/17 10:16	01/18/17 10:53	321-60-8	
Terphenyl-d14 (S)	71	%.	25-150	1	01/17/17 10:16	01/17/17 22:14	1718-51-0	
Terphenyl-d14 (S)	54	%.	25-150	10	01/17/17 10:16	01/18/17 10:53	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 503	0B/8260					
Acetone	ND	ug/L	4.0	1		01/17/17 17:37	67-64-1	
Benzene	2.3	ug/L	0.50	1		01/17/17 17:37	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 17:37	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 17:37	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:37	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:37	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:37	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:37		
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:37		
Chloroform	ND	ug/L	0.50	1		01/17/17 17:37		
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:37		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:37		
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:37		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:37		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:37		
		_						



ANALYTICAL RESULTS

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

Gasoline Range Organics

4-Bromofluorobenzene (S)

8260 MSV Low Level

Bromodichloromethane

Date: 02/15/2017 12:15 PM

Surrogates

Acetone

Benzene

Bromoform

Bromomethane

2048681

Sample: MW-37A Lab ID: 2048681007 Collected: 01/12/17 14:38 Received: atrix: Water Parameters Results Units Report Limit Prepared Analyzed CAS No. Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 1.1-Dichloroethane ND ug/L 0.50 01/17/17 17:37 75-34-3 1 1.2-Dichloroethane ND ug/L 0.50 1 01/17/17 17:37 107-06-2 75-35-4 1.1-Dichloroethene ND ug/L 0.50 1 01/17/17 17:37 ND cis-1,2-Dichloroethene ug/L 1.0 1 01/17/17 17:37 156-59-2 ND 0.50 156-60-5 trans-1,2-Dichloroethene ug/L 1 01/17/17 17:37 ND 0.50 01/17/17 17:37 78-87-5 1,2-Dichloropropane ug/L cis-1,3-Dichloropropene ND ug/L 0.50 01/17/17 17:37 10061-01-5 ND 0.50 01/17/17 17:37 10061-02-6 trans-1,3-Dichloropropene ug/L 17.9 0.50 01/17/17 17:37 100-41-4 Ethylbenzene ug/L 1 2-Hexanone ND ug/L 1.0 1 01/17/17 17:37 591-78-6 Isopropylbenzene (Cumene) 7.9 ug/L 1.0 1 01/17/17 17:37 98-82-8 Methyl acetate ND ug/L 2.0 01/17/17 17:37 79-20-9 01/17/17 17:37 75-09-2 Methylene Chloride 0.54ug/L 0.50 4-Methyl-2-pentanone (MIBK) 01/17/17 17:37 108-10-1 ND ug/L 1.0 0.50 01/17/17 17:37 1634-04-4 Methyl-tert-butyl ether 1.2 ug/L 01/17/17 17:37 100-42-5 Styrene ND ug/L 1.0 1 79-34-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 1 01/17/17 17:37 01/17/17 17:37 127-18-4 Tetrachloroethene ND 0.50 ug/L 0.50 01/17/17 17:37 108-88-3 0.69 Toluene ug/L 01/17/17 17:37 71-55-6 1,1,1-Trichloroethane ND ug/L 0.50 1.1.2-Trichloroethane ND 0.50 01/17/17 17:37 79-00-5 ug/L 0.50 01/17/17 17:37 79-01-6 Trichloroethene ND ug/L 1 ND 0.50 01/17/17 17:37 75-69-4 Trichlorofluoromethane ug/L 1 ND 0.50 01/17/17 17:37 75-01-4 Vinyl chloride ug/L 1 m&p-Xylene 40.3 2.0 01/17/17 17:37 179601-23-1 ug/L 1 o-Xylene 2.7 ug/L 1.0 1 01/17/17 17:37 95-47-6 Surrogates 01/17/17 17:37 1868-53-7 %. Dibromofluoromethane (S) 108 72-126 1 01/17/17 17:37 460-00-4 4-Bromofluorobenzene (S) 97 68-124 %. 1 01/17/17 17:37 2037-26-5 102 79-119 Toluene-d8 (S) % 1 Sample: FB-011217 Lab ID: 2048681008 Collected: 01/12/17 14:48 Received: 01/12/17 15:48 Matrix: Water DF Analyzed CAS No. Qual Parameters Results Units Report Limit Prepared 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

REPORT OF LABORATORY ANALYSIS

50.0

44-148

4.0

0.50

0.50

0.50

0.50

1

1

1

1

01/19/17 01:57

01/19/17 01:57 460-00-4

01/17/17 17:55 67-64-1

01/17/17 17:55 71-43-2

01/17/17 17:55 75-27-4

01/17/17 17:55 75-25-2

01/17/17 17:55 74-83-9

ND

98

11.8

ND

1.2

ND

ND

ug/L

%.

ug/L

ug/L

ug/L

ug/L

ug/L

Analytical Method: EPA 5030B/8260

C9

Pace Analytical Services, LLC

Riverbend Blvd - Suite F

St. Rose, LA 70087 (504)469-0333

IADO



OCIADO Pace 1000

Pace Analytical Services, LLC 1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333

ANALYTICAL RESULTS

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

Date: 02/15/2017 12:15 PM

2048681

Sample: FB-011217	Lab ID: 204	8681008	Collected: 01/12/1	7 14:48		1/12/17 15:48	//atrix: Water	atrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual		
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260							
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:55	78-93-3			
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:55	75-15-0	L3		
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:55	56-23-5			
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:55	108-90-7			
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:55	75-00-3			
Chloroform	5.0	ug/L	0.50	1		01/17/17 17:55	67-66-3			
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:55	74-87-3			
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:55	96-12-8			
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:55	124-48-1			
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:55	106-93-4			
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:55	75-71-8			
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	75-34-3			
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	107-06-2			
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:55	75-35-4			
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:55	156-59-2			
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:55	156-60-5			
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:55				
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:55				
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:55				
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:55	100-41-4			
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:55				
Isopropyłbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:55				
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:55				
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 17:55				
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:55	108-10-1			
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 17:55				
Styrene	ND	ug/L	1.0	1		01/17/17 17:55				
1,1,2,2-Tetrachloroethane	ND	ug/L	0,50	1		01/17/17 17:55				
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:55				
Toluene	ND	ug/L	0,50	1		01/17/17 17:55				
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:55				
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:55				
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:55				
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:55				
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:55				
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 17:55		l		
o-Xylene	ND	ug/L	1.0	1		01/17/17 17:55		,		
Surrogates	.45	ug, L	1.0	'		5 17 17 17 17 100	, 00 47 0			
Dibromofluoromethane (S)	107	%.	72-126	1		01/17/17 17:55	1868-53-7			
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/17/17 17:55				
Toluene-d8 (S)	101	%.	79-119	1		01/17/17 17:55				



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

QC Batch:

72351

Analysis Method:

EPA 8015/8021

QC Batch Method:

EPA 8015/8021

Analysis Description:

8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples:

2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

METHOD BLANK: 303024

Matrix: Water

Date: 02/15/2017 12:15 PM

Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

Blank

Reporting

Parameter	Units	Result	Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/18/17 18:45	
4-Bromofluorobenzene (S)	%.	99	44-148	01/18/17 18:45	

LABORATORY CONTROL SAMPLE: 303025

		Spike	LCS	LCS	% Rec	
Parameter	Units	Canc.	Result	% Rec	Limits	Qualifiers
Gasoline Range Organics	ug/L	500	464	93	61-136	·
4-Bromofluorobenzene (S)	%.			99	44-148	
4-Bromofluorobenzene (S)	%.			100	44-148	

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	ATE: 303020	ô		303027							
Parameter	Units	2048850001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits		Max RPD	Qual
Gasoline Range Organics	ug/L		500	500	592	569	113	109	15-147	4	20	
4-Bromofluorobenzene (S)	%.						100	100	44-148			
4-Bromofluorobenzene (S)	%.						94	100	44-148			
4-Bromofluorobenzene (S)	%.						100	102	44-148			
4-Bromofluorobenzene (S)	%.						94	102	44-148			



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

QC Batch:

72219

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Associated Lab Samples:

Analysis Description: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

7470 Mercury

METHOD BLANK: 302543

Matrix: Water

Associated Lab Samples:

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Blank

Reporting

Parameter

Units

Result

Limit Analyzed Qualifiers

Mercury

Mercury

ug/L

Units

ug/L

Units

ug/L

ND

0.20 01/19/17 10:57

LABORATORY CONTROL SAMPLE:

Parameter

Spike

Conc.

LCS Result

LCS % Rec % Rec Limits

80-120

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

302545

302546

1

MSD

1.0

MSD

103

MSD

103

% Rec

Max RPD RPD

2048681002 Spike

ND

Spike

1

MS Result

MS Result % Rec

% Rec

Limits

Qual

Mercury

Parameter

Result Conc.

MS

Conc.

1.0

1.0

105

75-125

2 20



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

QC Batch:

72220

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description:

7470 Mercury Dissolved

Associated Lab Samples:

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302547

Matrix: Water

Associated Lab Samples:

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Blank

Reporting

Parameter

Parameter

Units

Result

Limit

Analyzed

Qualifiers

Mercury, Dissolved

ug/L

ND

0.20 01/19/17 12:11

LABORATORY CONTROL SAMPLE: 302548

> Spike Conc.

LCS Result

LCS % Rec % Rec Limits

Qualifiers

Mercury, Dissolved

Date: 02/15/2017 12:15 PM

Units ug/L

1.1

110

80-120



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

QC Batch:

72197

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3010

Analysis Description:

6020 MET

Associated Lab Samples:

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Matrix: Water

METHOD BLANK: 302459 Associated Lab Samples:

Date: 02/15/2017 12:15 PM

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/11/17 11:14	
Chromium	mg/L	ND	0.0010	02/11/17 11:14	
Lead	mg/L	ND	0.0010	02/11/17 11:14	
Vanadium	mg/L	ND	0.0050	02/11/17 11:14	

LABORATORY CONTROL SAMPLE:	302460	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0.020	101	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	84-115	
Vanadium	mg/L	.02	0.019	93	81-115	

MATRIX SPIKE & MATRIX S	PIKE DUPLIC	CATE: 30246	1		302462							
		2048748001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	0.00045J	.02	.02	0.020	0.021	98	100	80-120	2	20	
Chromium	mg/L	0.0012	.02	.02	0.021	0.021	99	100	80-120	1	20	
Lead	mg/L	0.00052J	.02	.02	0.021	0.021	102	104	80-120	3	20	
Vanadium	mg/L	ND	.02	.02	0.022	0.021	108	107	80-120	1	20	



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

QC Batch:

72224

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3005A

Analysis Description:

6020 MET Dissolved

Associated Lab Samples:

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302560

Date: 02/15/2017 12:15 PM

Matrix: Water

Associated Lab Samples:

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	+	Blank	Reporting		
	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Chromium, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Lead, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Vanadium, Dissolved	ua/L	ND	5.0	02/11/17 11:07	

LABORATORY CONTROL SAMPLE:	302561					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	19.9	100	80-120	
Chromium, Dissolved	ug/L	20	21.3	107	80-120	
Lead, Dissolved	ug/L	20	19.6	98	80-120	
Vanadium, Dissolved	ug/L	20	17.2	86	80-120	



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

QC Batch:

72210

Analysis Method:

EPA 5030B/8260

QC Batch Method:

EPA 5030B/8260

Analysis Description:

8260 MSV Low Level

Associated Lab Samples:

METHOD BLANK: 302517

Matrix: Water

Date: 02/15/2017 12:15 PM

Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1-Dichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1-Dichloroethene	ug/L	ND	0.50	01/17/17 10:33	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/17/17 10:33	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/17/17 10:33	
1,2-Dichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,2-Dichloropropane	ug/L	ND	0.50	01/17/17 10:33	
2-Butanone (MEK)	ug/L	ND	2.0	01/17/17 10:33	
2-Hexanone	ug/L	ND	1.0	01/17/17 10:33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/17/17 10:33	
Acetone	ug/L	ND	4.0	01/17/17 10:33	
Benzene	ug/L	ND	0.50	01/17/17 10:33	
Bromodichloromethane	ug/L	ND	0.50	01/17/17 10:33	
Bromoform	ug/L	ND	0.50	01/17/17 10:33	
Bromomethane	ug/L	ND	0.50	01/17/17 10:33	
Carbon disulfide	ug/L	ND	1.0	01/17/17 10:33	
Carbon tetrachloride	υg/L	ND	0.50	01/17/17 10:33	
Chlorobenzene	ug/L	ND	0.50	01/17/17 10:33	
Chloroethane	ug/L	ND	0.50	01/17/17 10:33	
Chloroform	ug/L	ND	0.50	01/17/17 10:33	
Chloromethane	ug/L	ND	0.50	01/17/17 10:33	
cis-1,2-Dichloroethene	ug/L	ND	1.0		
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/17/17 10:33	
Dibromochloromethane	ug/L	ND	0.50	01/17/17 10:33	
Dichlorodifluoromethane	ug/L	ND	1.0	01/17/17 10:33	
Ethylbenzene	ug/L	ND	0.50	01/17/17 10:33	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/17/17 10:33	
m&p-Xylene	ug/L	ND	2.0	01/17/17 10:33	
Methyl acetate	ug/L	ND	2.0	01/17/17 10:33	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/17/17 10:33	
Methylene Chloride	ug/L	ND	0.50	01/17/17 10:33	
o-Xylene	ug/L	ND	1.0	01/17/17 10:33	
Styrene	ug/L	ND	1.0	01/17/17 10:33	
Tetrachloroethene	ug/L	ND	0.50	01/17/17 10:33	
Toluene	ug/L	ND	0.50	01/17/17 10:33	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/17/17 10:33	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/17/17 10:33	
Trichloroethene	ug/L	ND	0.50	01/17/17 10:33	
Trichlorofluoromethane	ug/L	ND	0.50	01/17/17 10:33	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

METHOD BLANK: 302517

Matrix: Water

Date: 02/15/2017 12:15 PM

Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	0.50	01/17/17 10:33	
4-Bromofluorobenzene (S)	%.	95	68-124	01/17/17 10:33	
Dibromofluoromethane (S)	%.	106	72-126	01/17/17 10:33	
Toluene-d8 (S)	%.	100	79-119	01/17/17 10:33	

LABORATORY CONTROL SAMPLE:	302518					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.9	108	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	52.7	105	15-179	
1,1,2-Trichloroethane	ug/L	50	50.9	102	58-144	
1,1-Dichloroethane	ug/L	50	58.4	117	63-129	
1,1-Dichloroethene	ug/L	50	54.5	109	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	52.5	105	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	49.5	99	52-161	
1,2-Dichloroethane	ug/L	50	53.9	108	57-148	
1,2-Dichloropropane	ug/L	50	56.9	114	66-128	
2-Butanone (MEK)	ug/L	50	59.8	120	32-183	
2-Hexanone	ug/L	50	51.8	104	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	53.0	106	26-171	
Acetone	ug/L	50	54.5	109	22-165	
Benzene	ug/L	50	54.4	109	62-131	
Bromodichloromethane	ug/L	50	55.4	111	69-132	
Bromoform	ug/L	50	47.5	95	35-166	
Bromomethane	ug/L	50	45.1	90	34-158	
Carbon disulfide	ug/L	50	74.0	148	31-128 L	0
Carbon tetrachloride	ug/L	50	52.2	104	54-144	
Chlorobenzene	ug/L	50	52.8	106	70-127	
Chloroethane	ug/L	50	40.3	81	17-195	
Chloroform	ug/L	50	56.6	113	73-134	
Chloromethane	ug/L	50	61.8	124	17-153	
cis-1,2-Dichloroethene	ug/L	50	54.1	108	68-129	
cis-1,3-Dichloropropene	ug/L	50	55.1	110	72-138	
Dibromochloromethane	ug/L	50	51.5	103	49-146	
Dichlorodifluoromethane	ug/L	50	53.0	106	10-179	
Ethylbenzene	ug/L	50	50.5	101	66-126	
Isopropylbenzene (Cumene)	ug/L	50	49.7	99	51-138	
m&p-Xylene	ug/L	100	101	101	65-129	
Methyl acetate	ug/L	50	56.4	113	20-142	
Methyl-tert-butyl ether	ug/L	50	53.1	106	37-166	
Methylene Chloride	ug/L	50	57.7	115	46-168	
o-Xylene	ug/L	50	49.3	99	65-124	
Styrene	ug/L	50	51.1	102	72-133	
Tetrachloroethene	ug/L	50	51.1	102	46-157	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

Date: 02/15/2017 12:15 PM

2048681

LABORATORY CONTROL SAMPLE:	302518					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Toluene	ug/L	50	53.3	107	69-126	
rans-1,2-Dichloroethene	ug/L	50	55.6	111	60-129	
rans-1,3-Dichloropropene	ug/L	50	54.0	108	59-149	
Frichloroethene	ug/L	50	54.5	109	67-132	
richlorofluoromethane	ug/L	50	54.4	109	39-171	
nyl chloride	ug/L	50	45.7	91	27-149	
Bromofluorobenzene (S)	%.			97	68-124	
ibromofluoromethane (S)	%.			105	72-126	
oluene-d8 (S)	%.			101	79-119	

MATRIX SPIKE & MATRIX SPIR	KE DUPLK	CATE: 30251	9		302520							
			MS	MSD								
S	1.1-21-	2048748001	Spike	Spike	MS	MSD	MS N.D	MSD	% Rec		Max	01
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	<u> </u>	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	63.7	55.7	127	111	54-137	13	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	58.2	54.8	116	110	15-187	6	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	57.7	51.5	115	103	59-148	11	20	
1,1-Dichloroethane	ug/L	ND	50	50	66.4	59.2	133	118	59-133	11	20	
1,1-Dichloroethene	ug/L	ND	50	50	65.8	58.8	132	118	44-146	11	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	57.3	52.7	115	105	23-166	8	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	54.8	51,1	110	102	55-166	7	20	
1,2-Dichloroethane	ug/L	ND	50	50	59.4	53.0	119	106	56-154	11	20	
1,2-Dichloropropane	ug/L	ND	50	50	61.4	55.6	123	111	62-135	10	20	
2-Butanone (MEK)	ug/L	ND	50	50	64.9	58.8	130	118	20-205	10	20	
2-Hexanone	ug/L	ND	50	50	54.7	52.9	109	106	25-189	3	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	57.9	54.1	116	108	23-184	7	20	
Acetone	ug/L	0.0057 mg/L	50	50	63.1	56.4	115	101	11-217	11	20	
Benzene	ug/L	ND	50	50	60.7	54.5	121	109	52-141	11	20	
Bromodichloromethane	ug/L	ND	50	50	60.5	55.0	121	110	70-134	10	20	
Bromoform	ug/L	ND	50	50	51.6	47.9	103	96	37-171	7	20	
Bromomethane	ug/L	ND	50	50	52.5	39.2	105	78	34-155	29	20	R1
Carbon disulfide	ug/L	ND	50	50	93.4	75.3	187	151	28-130	21	20	M0,R1
Carbon tetrachloride	ug/L	ND	50	50	60.9	53.3	122	107	48-146	13	20	
Chlorobenzene	ug/L	ND	50	50	59.5	53.4	119	107	67-129	11	20	
Chloroethane	ug/L	ND	50	50	47.6	37.0	95	74	12-192	25	20	R1
Chloroform	ug/L	ND	50	50	63.7	57.1	127	114	66-143	11	20	
Chloromethane	ug/L	ND	50	50	67.1	59.6	134	119	14-155	12	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.2	56.3	122	113	56-141	8	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	60.7	54.3	121	109	70-139	11	20	
Dibromochloromethane	ug/L	ND	50	50	55.1	51.4	110	103	50-150	7	20	
Dichlorodifluoromethane	ug/L	ND	50	50	55.6	48.6	111	97	10-173	14	20	
Ethylbenzene	ug/L	ND	50	50	57.4	51.8	1 15	104	57-135	10	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	58.1	54.3	116	109	40-146	7	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

Date: 02/15/2017 12:15 PM

2048681

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	CATÉ: 30251	9		302520							
			MS	MSD								
		2048748001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
m&p-Xylene	ug/L		100	100	116	105	116	105	56-136	10	20	
Methyl acetate	ug/L	ND	50	50	57.5	58.6	115	117	10-142	2	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	58.1	52.9	116	106	35-176	9	20	
Methylene Chloride	ug/L	ND	50	50	63.8	55.1	128	110	45-166	15	20	
o-Xylene	ug/L	ND	50	50	54.8	49.9	110	100	57-133	9	20	
Styrene	ug/L	ND	50	50	57.0	51.0	1 14	102	58-144	11	20	
Tetrachioroethene	ug/L	ND	50	50	60.2	54.5	120	109	48-143	10	20	
Toluene	, ug/L	ND	50	50	58.8	53.8	118	108	59-136	9	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	64.5	57.7	129	115	57-132	11	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	60.8	55.1	122	110	59-154	10	20	
Trichloroethene	ug/L	ND	50	50	61.3	55.9	123	112	58-140	9	20	
Trichlorofluoromethane	· ug/L	ND	50	50	67.6	57.1	135	114	24-175	17	20	
Vinyl chloride	ug/L	ND	50	50	51.7	44.1	103	88	21-150	16	20	
4-Bromofluorobenzene (S)	%.						98	99	68-124			
Dibromofluoromethane (S)	%.						108	107	72-126			
Toluene-d8 (S)	%.						100	101	79-119			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

QC Batch:

72198

Analysis Method:

EPA 8015B Modified

QC Batch Method: EPA 3535 Analysis Description:

EPA 8015 ORO

Associated Lab Samples:

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302463

Matrix: Water

Associated Lab Samples:

Date: 02/15/2017 12:15 PM

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/18/17 15:39	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/18/17 15:39	
n-Pentacosane (S)	%.	38	16-137	01/18/17 15:39	
o-Terphenyl (S)	%.	47	10-121	01/18/17 15:39	

LABORATORY CONTROL SAMPLE:	302464					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L				10-115	
n-Pentacosane (S)	%.			51	16-137	
o-Terphenyl (S)	%.			61	10-121	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

QC Batch:

72204

Analysis Method:

EPA 8270 by SIM

QC Batch Method:

EPA 3510

Analysis Description:

8270 Water by SIM MSSV

Associated Lab Samples:

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302499

Matrix: Water

Associated Lab Samples:

Date: 02/15/2017 12:15 PM

2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/17/17 17:36	
Acenaphthene	ug/L	ND	0.10	01/17/17 17:36	
Acenaphthylene	ug/L	ND	0.10	01/17/17 17:36	
Anthracene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(a)anthracene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(a)pyrene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Chrysene	ug/L	ND	0.10	01/17/17 17:36	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/17/17 17:36	
Fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Fluorene	· ug/L	ND	0.10	01/17/17 17:36	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/17/17 17:36	
Naphthalene	ug/L	ND	0.10	01/17/17 17:36	
Phenanthrene	ug/L	ND	0.10	01/17/17 17:36	
Pyrene	ug/L	ND	0.10	01/17/17 17:36	
2-Fluorobiphenyl (S)	%.	67	25-150	01/17/17 17:36	
Terphenyl-d14 (S)	%.	72	25-150	01/17/17 17:36	

LABORATORY CONTROL SAMPLE:	302500					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.6	90	35-150	
Acenaphthene	ug/L	4	3.6	91	35-150	
Acenaphthylene	ug/L	4	3.5	88	35-150	
Anthracene	ug/L	4	4.5	112	35-150	
Benzo(a)anthracene	ug/L	4	4.0	99	35-150	
Benzo(a)pyrene	ug/L	4	3.7	91	35-150	
Benzo(b)fluoranthene	ug/L	4	3.6	91	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.1	102	35-150	
Benzo(k)fluoranthene	ug/L	4	3.7	93	35-150	
Chrysene	ug/L	4	3.7	93	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.6	115	35-150	
Fluoranthene	ug/L	4	3.7	93	35-150	
Fluorene	ug/L	4	3.7	92	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.4	110	35-150	
Naphthalene	ug/L	4	3.3	82	35-150	
Phenanthrene	ug/L	4	3.8	96	35-150	
Pyrene	ug/L	4	3.4	85	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

Date: 02/15/2017 12:15 PM

2048681

LABORATORY CONTROL SAMPLE:	302500					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			101	25-150	
Terphenyl-d14 (S)	%.			108	25-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

2048681

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72289 [M5]

A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 72350

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 72356

[1]

Insufficient sample volume to perform MS/MSD analyses.

ANALYTE QUALIFIERS

Date: 02/15/2017 12:15 PM

C9 Common Laboratory Contaminant.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in

associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Date: 02/15/2017 12:15 PM

ab ID	Sample ID QC Batch Method		QC Batch	Analytical Method	Analytica Batch	
048681002	EB-011217	EPA 3535	72198	EPA 8015B Modified	72350	
048681003	MW-76B2	EPA 3535	72198	EPA 8015B Modified	72350	
048681004	MW-76A	EPA 3535	72198	EPA 8015B Modified	72350	
048681005	MW-13A	EPA 3535	72198	EPA 8015B Modified	72350	
048681006	MW-13B2	EPA 3535	72198	EPA 8015B Modified	72350	
048681007	MW-37A	EPA 3535	72198	EPA 8015B Modified	72350	
048681001	TB-011217	EPA 8015/8021	72351			
048681002	EB-011217	EPA 8015/8021	72351			
048681003	MW-76B2	EPA 8015/8021	72351			
048681004	MW-76A	EPA 8015/8021	72351			
048681005	MW-13A	EPA 8015/8021	72351			
048681006	MW-13B2	EPA 8015/8021	72351			
048681007	MW-37A	EPA 8015/8021	72351			
048681008	FB-011217	EPA 8015/8021	72351			
048681002	EB-011217	EPA 3010	72197	EPA 6020	72202	
048681003	MW-76B2	EPA 3010	72197	EPA 6020	72202	
048681004	MW-76A	EPA 3010	72197	EPA 6020	72202	
048681005	MW-13A	EPA 3010	72197	EPA 6020	72202	
048681006	MW-13B2	EPA 3010	72197	EPA 6020	72202	
048681007	MW-37A	EPA 3010	72197	EPA 6020	72202	
348681002	EB-011217	EPA 3005A	72224	EPA 6020	72356	
048681003	MW-76B2	EPA 3005A	72224	EPA 6020	72356	
048681004	MW-76A	EPA 3005A	72224	EPA 6020	72356	
048681005	MW-13A	EPA 3005A	72224	EPA 6020	72356	
048681006	MW-13B2	EPA 3005A	72224	EPA 6020	72356	
048681007	MW-37A	EPA 3005A	72224	EPA 6020	72356	
048681002	EB-011217	EPA 7470	72219	EPA 7470	72363	
048681003	MW-76B2	EPA 7470	72219	EPA 7470	72363	
D48681004	MW-76A	EPA 7470	72219	EPA 7470	72363	
048681005	MW-13A	EPA 7470	72219	EPA 7470	72363	
048681006	MW-13B2	EPA 7470	72219	EPA 7470	72363	
048681007	MW-37A	EPA 7470	72219	EPA 7470	72363	
048681002	EB-011217	EPA 7470	72220	EPA 7470	72355	
048681003	MW-76B2	EPA 7470	72220	EPA 7470	72355	
048681004	MW-76A	EPA 7470	72220	EPA 7470	72355	
048681005	MW-13A	EPA 7470	72220	EPA 7470	72355	
048681006	MW-13B2	EPA 7470	72220	EPA 7470	72355	
048681007	MW-37A	EPA 7470	72220	EPA 7470	72355	
048681002	EB-011217	EPA 3510	72204	EPA 8270 by SIM	72289	
048681003	MW-76B2	EPA 3510	72204	EPA 8270 by SIM	72289	
048681004	MW-76A	EPA 3510	72204	EPA 8270 by SIM	72289	
048681005	MW-13A	EPA 3510	72204	EPA 8270 by SIM	72289	
048681006	MW-13B2	EPA 3510	72204	EPA 8270 by SIM	72289	
048681007	MW-37A	EPA 3510	72204	EPA 8270 by SIM	72289	



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL MS SAMPLING

Pace Project No.:

Date: 02/15/2017 12:15 PM

2048681

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048681002	EB-011217	EPA 5030B/8260	72210		
2048681003	MW-76B2	EPA 5030B/8260	72210		
2048681004	MW-76A	EPA 5030B/8260	72210		
2048681005	MW-13A	EPA 5030B/8260	72210		
2048681006	MW-13B2	EPA 5030B/8260	72210		
2048681007	MW-37A	EPA 5030B/8260	72210		
2048681008	FB-011217	EPA 5030B/8260	72210		



CHAIN-OF-CUSTODY.
The Chain-of-Custody is a LEGAL DOCU

WO#: 2048681

|--|

	Section B				Section C	2048681]]]]		of	
<u> </u>	Required Project In Report To:		/n \\		Invoice Informa Attention:					207527	75 l
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Frail To	Purchase Order No.	.:			Pace Quote						AR AAN ICK
as en-expense of reality went					Reference:		` _		RCRA	OTHER	
Address: Citiview Place snite 401 Rd KS KM 12 cmmob PR Email To: Caldra C encalsons co Place 1970 4200 Faxed - M-5056 Requested Due Date/TAT:	Project Number	no 15	W Person	in sombre	Manager: Pace Profile #:	J-an R	16 males	Site Location	P.5		
Requested Due Date/TAT:	Froject Number.	<u>-007 . N</u>	W ferron		. 200 / 10/110 /1.		i a sama a	STATE:			
	<u> </u>			1	i i			Analysis Filtere	a (114)		
Section D Matrix Co Required Client Information MATRIX A.	odes g		COLLECTED		Pre	eservatives	TN 7.				
Drinking Water Water Waste Water Product	₩T 78 [¿	COMPOSITE START	E COMPOSIT . END/GRAI				3 3 3	Moted Moted		(N/A	
Soi/Sofid SAMPLE ID Oil Wipe	W/D	į	<u> </u>		ERS			\$ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		ine (-
(A-Z, 0-9 / ,-) Air . Sample IDs MUST BE UNIQUE Tissue	AR TS OT	ł I		A 9M	CONTAINERS		\$ Test \$0\%			일 2. 5. 1	
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TEM#	MATRIX	DATE	TIME DATE	TIME SAMPL	# OF Unpre		LAnalysis VOUS C-RO 6	Avads Metals Dissolve		Residual Chlorine (Y/N) Bace Project	No./ Lab I.D.
TOTAL COLLABOR	WT G			LAA	24	4					
2 EB-011217 3 MW-16B2	WT C		01/12/0) (4			-		
3 MW-96B2			01/2/0		105 1			1× × 1			
4 MW- 764		_ اورُ	0:/12/17		102	4					
5 MW-13A		(J		1245	105 1	4		133 H			
6 MW-13B2 7 MW-37A		<u> </u>	01/12/01 01/12/0	346	10 4 1	i i		XXX			
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ADDITIONAL COMMENTS	RELIN	QUISHED BY I AF	FILIATION	DATE	TIME	ACCEPTE	D BY / AFFILIATION	The second section of the section of the second section of the	TIME	SAMPLE CONDI	TIONS
	Andri	(p) on //	4-6225 6	1/12/17	1540	2	2-16ac	· 17277	15:48		ļ
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OF OF 47	** ********	-		of SAMPLER	- 6	<u></u>	DATE Signe	10. /- / h		Recalved on tce (Y/N) Custody Sealed Cooler (Y/N)	Samples Intact [*] (Y/N)
47			SIGNATURE	. ON WITHER	· Ilmin		(MM/DD/YY):	01/12/10) Ø

W0#:2048681

Sample Condition Upon Receip

PM: JAR1

Due Date: 01/26/17

Pace Analytical	ou.				ф		CLIENT: 98-ARCADISPR
	1000 Riverbend, Blvd., Suit St. Rose, LA 70087	e F			Proje	ct #.	- Control of the Cont
Courier:	☐ Hired Courier	∠ Fe	dΧ	□ UF	rs 🗆 DI	HL	☐ USPS ☐ Customer ☐ Other
Custody Seal on Cooler/Box P	resent: [see	COC]					Custody Seals intact: ☐Yes ☐No
Therometer :: Therm Fi	sher IR 6	Туре	of Ice:	· (^	Vet Blue N	lone	Samples on ice: [see COC]
Cooler Temperature: [see (COC] Ten	ıp shoul	ld be a	above fr	réezing to 6°C		Date and Initials of person examining contents: 1-13-17 UMB
Temp must be measured from Ter	mperature blank when i	oresent			Comments:		
Temperature Blank Present"?		□Yes	□No,	N/A	1		
Chain of Custody Present:		Yes (□No	□n/a	2		
Chain of Custody Complete:		Yes	□Ńo	□n/a	3		
Chain of Custody Relinquished	1.	ôYes	□No	□n/a	4		
Sampler Name & Signature or	COC:	νÝes	□No	□n/a	5		
Samples Arrived within Hold T		√ZYes	□No	□n/a	6		
Sufficient Volume:		√es	□No	□n/a	7		
Correct Containers Used:		es	□No	□n/a	8		
Filtered vol. Rec. for Diss. test	s	□Yes	□No	-∕∐N/A	9		
Sample Labels match COC:	·	√Yes	□No	□N/A	10		
All containers received within representationary and/or expiration		√√es				-	
All containers needing chemic been checked (except VOA, co		Yes	□N□	□n/a			
All containers preservation che compliance with EPA recomm		Yes	□No	□n/a			oreserative added? □Yes □No cord lot no.: HNO3 H2SO4
Headspace in VOA Vials (>6n	nm):			□n/a	14		
Trip Blank Present:		Yes	□No		15		
Client Notification/ Resolution	on:						
Person Contacted:							Date/Time:
Comments/ Resolution:							





February 14, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 18, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Juan Redondo

juan.redondo@pacelabs.com

Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez

Marianela Mercado-Burgos







CERTIFICATIONS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:

11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):

02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202 Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

00119

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048890001	TB-011717	Water	01/17/17 00:00	01/18/17 14:45
2048890002	EB-011717	Water	01/17/17 09:46	01/18/17 14:45
2048890003	MW-110AB	Water	01/17/17 10:49	01/18/17 14:45
2048890004	MW-110B2	Water	01/17/17 11:38	01/18/17 14:45
2048890005	MW-111A	Water	01/17/17 12:36	01/18/17 14:45
2048890006	MW-114A	Water	01/17/17 16:21	01/18/17 14:45
2048890007	DUP006	Water	01/17/17 00:00	01/18/17 14:45
2048890008	MW-75B2	Water	01/17/17 14:50	01/18/17 14:45
2048890009	FB-011717	Water	01/17/17 16:30	01/18/17 14:45
2048890010	MW-63A	Water	01/18/17 10:33	01/18/17 14:45



SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048890001	TB-011717	EPA 8015/8021	мнм	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890002	EB-011717	EPA 8015B Modified	JN	4	PASI-N
'		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	мнв1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890003	MW-110AB	EPA 8015B Modified	JN	4	PASI-N
-		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890004	MW-110B2	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890005	MW-111A	EPA 8015B Modified	JN	4	PASI-N
	•	EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR ·	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890006	MW-114A	EPA 8015B Modified	JN	4	PASI-N
-		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

ab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
048890007	DUP006	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890008	MW-75B2	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	мнв1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890009	FB-011717	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890010	MW-63A	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
		EPA 6020	KJR	4	PASI-N
	1.	EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	мнв1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N





Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



(504)469-0333



PROJECT NARRATIVE

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Method:

EPA 8015/8021

Client:

Description: 8021 GCV BTEX, MTBE, GRO

Date:

BBL Caribe / Arcadis PR February 14, 2017

General Information:

10 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:





Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Method: EPA 6020

Description: 6020 MET ICPMS

Client:

BBL Caribe / Arcadis PR

Date:

February 14, 2017

General Information:

8 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72609

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304155)
 - Chromium
 - Vanadium
- MSD (Lab ID: 304156)
 - Chromium
 - Vanadium

R1: RPD value was outside control limits.

- MSD (Lab ID: 304156)
 - Arsenic
 - Chromium
 - Lead
 - Vanadium

REPORT OF LABORATORY ANALYSIS

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Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Method: EPA

EPA 6020

Description: 6020 MET ICPMS

Client:

BBL Caribe / Arcadis PR

Date:

February 14, 2017

Additional Comments:



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client:

BBL Caribe / Arcadis PR

Date:

February 14, 2017

General Information:

8 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72614

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304167)
 - Vanadium, Dissolved
- MSD (Lab ID: 304168)
 - · Vanadium, Dissolved

Additional Comments:





Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Method:

EPA 7470 Description: 7470 Mercury

Client:

BBL Caribe / Arcadis PR

Date:

February 14, 2017

General Information:

8 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:





Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF) **Client**: BBL Caribe / Arcadis PR

Date:

February 14, 2017

General Information:

8 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Method:

EPA 8270 by SIM

Client:

Description: 8270 MSSV PAH by SIM SEP

Date:

BBL Caribe / Arcadis PR

February 14, 2017

General Information:

8 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72547

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 72592

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304108)
 - Anthracene
- MSD (Lab ID: 304109)
 - Anthracene

Additional Comments:



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR

Date:

February 14, 2017

General Information:

10 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72436

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 303415)
 - Styrene
- · MSD (Lab ID: 303416)
 - Styrene

Additional Comments:

Analyte Comments:

QC Batch: 72436

C9: Common Laboratory Contaminant.

- DUP006 (Lab ID: 2048890007)
 - Acetone



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

Method:

EPA 5030B/8260 Description: 8260 MSV Low Level

Client:

BBL Caribe / Arcadis PR

Date:

February 14, 2017

Analyte Comments:

QC Batch: 72436

C9: Common Laboratory Contaminant.

- EB-011717 (Lab ID: 2048890002)
 - Acetone
- FB-011717 (Lab ID: 2048890009)
 - Acetone
- MW-110AB (Lab ID: 2048890003)
 - Acetone
- MW-110B2 (Lab ID: 2048890004)
 - Acetone
- MW-114A (Lab ID: 2048890006)
 - Acetone
- MW-63A (Lab ID: 2048890010)
 - Acetone
- MW-75B2 (Lab ID: 2048890008)
 - Acetone
- TB-011717 (Lab ID: 2048890001)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Parameters 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform	Results Analytical Method 94 Analytical Method 19.6 ND 0.56 ND ND ND ND ND ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L	50.0 44-148	1 1 1	Prepared A	Qual C9
Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform	ND 94 Analytical Meth 19.6 ND 0.56 ND ND ND ND ND ND ND	ug/L %. nod: EPA 50 ug/L ug/L ug/L ug/L ug/L	50.0 44-148 030B/8260 4.0 0.50 0.50 0.50	1 1 1	01/20/17 06:05 01/20/17 06:05 460-00-4 01/19/17 14:18 67-64-1 01/19/17 14:18 71-43-2	С9
Surrogates 4-Bromofluorobenzene (S) 8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform	94 Analytical Metr 19.6 ND 0.56 ND ND ND ND ND ND ND ND ND ND	%. ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	44-148 030B/8260 4.0 0.50 0.50 0.50	1 1 1	01/20/17 06:05 460-00-4 01/19/17 14:18 67-64-1 01/19/17 14:18 71-43-2	C9
8260 MSV Low Level Acetone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chłoroform	Analytical Methods 19.6 ND 0.56 ND ND ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	030B/8260 4.0 0.50 0.50 0.50	1 1 1	01/19/17 14:18 67-64-1 01/19/17 14:18 71-43-2	C9
Acefone Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chłoroform	19.6 ND 0.56 ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L	4.0 0.50 0.50 0.50	1 1	01/19/17 14:18 71-43-2	C9
Benzene Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chłoroform	ND 0.56 ND ND ND ND	ug/L ug/L ug/L ug/L ug/L	0.50 0.50 0.50	1 1	01/19/17 14:18 71-43-2	C9
Bromodichloromethane Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chłoroform	0.56 ND ND ND ND ND	ug/L ug/L ug/L ug/L	0.50 0.50	1		
Bromoform Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chłoroform	ND ND ND ND ND	ug/L ug/L ug/L	0.50		01/10/17 14:10 75 07 4	
Bromomethane 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chłoroform	ND ND ND ND	ug/L ug/L			01/19/17 14:18 75-27-4	
2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chłoroform	ND ND ND	ug/L	0.50	1	01/19/17 14:18 75-25-2	
Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chłoroform	ND ND	-	0.50	1	01/19/17 14:18 74-83-9	
Carbon tetrachloride Chlorobenzene Chloroethane Chłoroform	ND		2.0	1	01/19/17 14:18 78-93-3	
Chlorobenzene Chloroethane Chłoroform		ug/L	1.0	1	01/19/17 14:18 75-15-0	
Chloroethane Chłoroform	ND	ug/L	0.50	1	01/19/17 14:18 56-23-5	
Chłoroform		ug/L	0.50	1	01/19/17 14:18 108-90-7	
	ND	ug/L	0.50	1	01/19/17 14:18 75-00-3	
	2.5	ug/L	0.50	1	01/19/17 14:18 67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/19/17 14:18 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/19/17 14:18 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/19/17 14:18 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/19/17 14:18 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/19/17 14:18 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/19/17 14:10 75-71-0	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/19/17 14:18 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		
cis-1,2-Dichloroethene	ND	_	1.0	1	01/19/17 14:18 75-35-4	
•		ug/L			01/19/17 14:18 156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/19/17 14:18 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/19/17 14:18 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/19/17 14:18 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/19/17 14:18 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/19/17 14:18 100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/19/17 14:18 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/19/17 14:18 98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/19/17 14:18 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/19/17 14:18 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/19/17 14:18 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/19/17 14:18 1634-04-4	
Styrene	ND	ug/L	1.0	1	01/19/17 14:18 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/19/17 14:18 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/19/17 14:18 127-18-4	
Toluene	ND	ug/L	0.50	1	01/19/17 14:18 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/19/17 14:18 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/19/17 14:18 79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/19/17 14:18 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/19/17 14:18 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/19/17 14:18 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/19/17 14:18 179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/19/17 14:18 95-47-6	

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

lec1	

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: TB-011717	Lab ID: 204	8890001	Collected: 01/17/1	7 00:00	Received: 01/18/4/1/19/ Matrix/ Rejer
Parameters	Results	Units	Report Limit	DF	Prepare Analyzed No. Qual
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260		CO LICENCIA
Surrogates					
Dibromofluoromethane (S)	95	%.	72-126	1	01/19/17 14:18 1868-53-7
4-Bromofluorobenzene (S)	100	%.	68-124	1	01/19/17 14:18 460-00-4
Toluene-d8 (S)	108	%.	79-119	1	01/19/17 14:18 2037-26-5

Sample: EB-011717	Lab ID: 204	8890002	Collected: 01/17/1	17 09:46	Received: 01	I/18/17 14:45 N	//atrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepa	ıration M	lethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 18:57		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 18:57		
n-Pentacosane (S)	53	%.	16-137	1	01/19/17 13:07	01/29/17 18:57	629-99-2	
o-Terphenyl (S)	51	%.	10-121	1	01/19/17 13:07	01/29/17 18:57	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/20/17 08:17		
4-Bromofluorobenzene (S)	93	%.	44-148	1		01/20/17 08:17	460-00-4	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	020 Preparation Met	had: EP	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:05	7440-38-2	
Chromium	ND	mg/L	0.0010	1		02/12/17 16:05		
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:05	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:05	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	20 Preparation Met	hod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:10	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:10	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:10	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:10	7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Met	hod: EP	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:21	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Metl	nod: EPA 74	470 Preparation Met	hod: EP	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:46	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Metl	nod: EPA 82	270 by SIM Preparat	ion Meth	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1		01/30/17 22:05		
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	120-12-7	
Benzo(a)anthracene	ИD	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	50-32-8	

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: EB-011717 Lab ID: 2048890002 Collected: 01/17/17 09:46 Rece Prepar Parameters Results Units Report Limit DF Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Benzo(b)fluoranthene ND 0.10 01/21/17 12:15 01/30/17 22:05 205-99-2 ug/L Benzo(g,h,i)perylene ND 0.10 01/21/17 12:15 01/30/17 22:05 191-24-2 1 uq/L Benzo(k)fluoranthene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 22:05 207-08-9 Chrysene ND 0.10 01/21/17 12:15 01/30/17 22:05 218-01-9 ug/L 1 Dibenz(a,h)anthracene ND 0.10 01/21/17 12:15 01/30/17 22:05 53-70-3 ua/L 1 Fluoranthene ND 0.1001/21/17 12:15 01/30/17 22:05 206-44-0 ug/L 1 Fluorene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 22:05 193-39-5 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 2-Methylnaphthalene ND 0.10 01/21/17 12:15 01/30/17 22:05 91-57-6 ug/L 1 Naphthalene ND 0.10 01/21/17 12:15 01/30/17 22:05 91-20-3 ug/L 1 Phenanthrene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 22:05 85-01-8 Pyrene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 22:05 129-00-0 Surrogates 2-Fluorobiphenyl (S) %. 123 25-150 1 01/21/17 12:15 01/30/17 22:05 321-60-8 Terphenyl-d14 (S) 123 %. 25-150 1 01/21/17 12:15 01/30/17 22:05 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 22.3 ug/L 4.0 1 01/19/17 14:37 67-64-1 C9Benzene ND ug/L 0.50 1 01/19/17 14:37 71-43-2 01/19/17 14:37 75-27-4 Bromodichloromethane ND ug/L 0.50 1 ug/L Bromoform ND 0.50 1 01/19/17 14:37 75-25-2 Bromomethane ND ug/L 0.50 1 01/19/17 14:37 74-83-9 2-Butanone (MEK) ND ug/L 2.0 1 01/19/17 14:37 78-93-3 Carbon disulfide ND ug/L 1.0 1 01/19/17 14:37 75-15-0 Carbon tetrachloride ND ug/L 0.50 01/19/17 14:37 56-23-5 Chlorobenzene NΩ ug/L 0.50 1 01/19/17 14:37 108-90-7 Chloroethane ND ug/L 0.50 1 01/19/17 14:37 75-00-3 Chloroform 2.1 ug/L 0.50 1 01/19/17 14:37 67-66-3 Chloromethane ND ug/L 0.50 1 01/19/17 14:37 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 01/19/17 14:37 96-12-8 Dibromochloromethane ND 0.50 01/19/17 14:37 124-48-1 ug/L 1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 01/19/17 14:37 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 01/19/17 14:37 75-71-8 1,1-Dichloroethane ND 0.50 ug/L 1 01/19/17 14:37 75-34-3 1,2-Dichloroethane ND 0.50 ug/L 1 01/19/17 14:37 107-06-2 1,1-Dichloroethene ND ug/L 0.50 1 01/19/17 14:37 75-35-4 cis-1,2-Dichloroethene ND ua/L 1.0 1 01/19/17 14:37 156-59-2 trans-1,2-Dichloroethene ND ug/L 0.50 1 01/19/17 14:37 156-60-5 1,2-Dichloropropane ND ug/L 0.50 1 01/19/17 14:37 78-87-5 cis-1,3-Dichloropropene ND ug/L 0.50 1 01/19/17 14:37 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 1 01/19/17 14:37 10061-02-6 Ethylbenzene ND ug/L 0.50 1 01/19/17 14:37 100-41-4 2-Hexanone ND ug/L 1.0 1 01/19/17 14:37 591-78-6 Isopropylbenzene (Cumene) ND 1.0 98-82-8 ug/L 1 01/19/17 14:37 Methyl acetate ND 2.0 ug/L 1 01/19/17 14:37 79-20-9 Methylene Chloride ND ua/L 0.50 1 01/19/17 14:37 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 01/19/17 14:37 108-10-1

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

Date: 02/14/2017 09:05 AM

2048890

Pace Project No.: 2048890					1571	144 14		
Sample: EB-011717	Lab ID: 2048	3890002	Collected: 01/17/1	7 09:46	Received 01	18/1 14 . 45/ M	atrix Water	
Parameters	Results	Units	Report Limit	DF	Prepared	WEO LICEN	No.	Qual
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260			CO LICEN		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 14:37	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 14:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:37	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 14:37	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 14:37	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 14:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:37	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:37	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 14:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:37	95-47-6	
Surrogates								
Dibromofluoromethane (S)	96	%.	72-126	1		01/19/17 14:37	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/19/17 14:37	460-00-4	
Toluene-d8 (S)	106	%.	79-119	1		01/19/17 14:37	2037-26-5	
Sample: MW-110AB	Lab ID: 204	8890003	Collected: 01/17/1	17 10:49	Received: 01	/18/17 14:45 M	atrix: Water	
Sample: MW-110AB Parameters	Lab ID: 204	8890003 Units	Collected: 01/17/19	17 10:49 DF	Received: 01 Prepared	/18/17 14:45 M Analyzed	atrix: Water CAS No.	Qual
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed		Qual
Parameters 8015M DRO/ORO Organics	Results Analytical Meth	Units	Report Limit	DF aration M	Prepared ethod: EPA 3535	Analyzed		Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28)	Results Analytical Meth	Units nod: EPA 8 mg/L	Report Limit 015B Modified Prepa	DF aration M	Prepared ethod: EPA 3535 01/19/17 13:07	Analyzed 01/29/17 19:28		Qual
Parameters 8015M DRO/ORO Organics	Results Analytical Meth	Units	Report Limit	DF aration M	Prepared ethod: EPA 3535 01/19/17 13:07	Analyzed		Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40)	Results Analytical Meth	Units nod: EPA 8 mg/L	Report Limit 015B Modified Prepa	DF aration M	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 19:28	CAS No.	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates	Results Analytical Meth ND ND	Units nod: EPA 8i mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF aration M 1 1	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 19:28 01/29/17 19:28	CAS No. 629-99-2	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S)	Results Analytical Method ND ND 52	Units nod: EPA 80 mg/L mg/L %. %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF aration M 1 1	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28	CAS No. 629-99-2	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	Results Analytical Method ND ND 52 55	Units nod: EPA 80 mg/L mg/L %. %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF aration M 1 1	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28	CAS No. 629-99-2	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO	Results Analytical Method ND ND 52 55 Analytical Method	Units nod: EPA 8i mg/L mg/L %. %. hod: EPA 8i	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF aration M 1 1 1	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28	CAS No. 629-99-2 84-15-1	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	Results Analytical Method ND ND 52 55 Analytical Method ND 92	Units nod: EPA 8/ mg/L mg/L %. %. nod: EPA 8/ ug/L %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0	DF aration M 1 1 1 1 1	Prepared lethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/20/17 06:32	CAS No. 629-99-2 84-15-1	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	Results Analytical Method ND ND 52 55 Analytical Method ND 92	Units nod: EPA 8/ mg/L mg/L %. %. nod: EPA 8/ ug/L %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0 44-148	DF aration M 1 1 1 1 1	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/20/17 06:32	CAS No. 629-99-2 84-15-1 460-00-4	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS	Results Analytical Method ND 52 55 Analytical Method ND 92 Analytical Method	Units nod: EPA 8/ mg/L %. %. nod: EPA 8/ ug/L %. anod: EPA 6/	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Meti	DF aration M 1 1 1 1 1 hod: EP	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 01:07	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/20/17 06:32	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic	Results Analytical Method ND 52 55 Analytical Method ND 92 Analytical Method 0.0012	Units nod: EPA 8/ mg/L %. %. nod: EPA 8/ ug/L %. nod: EPA 6/ mg/L	Report Limit 0.15B Modified Preparation Mett 0.15B Modified Preparation Mett 0.0010	DF aration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/20/17 06:32 01/20/17 06:32	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium	Results Analytical Method ND 52 55 Analytical Method ND 92 Analytical Method 0.0012 0.0015	Units mod: EPA 8/ mg/L %. %. nod: EPA 8/ ug/L %. nod: EPA 6/ mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Meti 0.0010 0.0010	DF aration M 1 1 1 1 1 hod: EP/ 1 1	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead	Results Analytical Method ND 52 55 Analytical Method ND 92 Analytical Method 0.0012 0.0015 ND 0.20	Units mg/L mg/L %. hod: EPA 8i ug/L %. hod: EPA 6i mg/L mg/L mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met 0.0010 0.0010 0.0010	DF aration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium	Results Analytical Method ND 52 55 Analytical Method ND 92 Analytical Method 0.0012 0.0015 ND 0.20	Units mg/L mg/L %. hod: EPA 8i ug/L %. hod: EPA 6i mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.0010 0.0010 0.0010 0.0010 0.0050	DF aration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 A 3010 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 A 3005A	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	Results Analytical Method ND 52 55 Analytical Method ND 92 Analytical Method 0.0012 0.0015 ND 0.20 Analytical Method	Units mod: EPA 84 mg/L %. %. hod: EPA 84 ug/L %. hod: EPA 64 mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met 0.0010 0.0010 0.0010 0.0050 020 Preparation Met	DF aration M 1 1 1 1 1 1 hod: EP/ 1 hod: EP/	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 A 3010 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 A 3005A 01/24/17 09:53	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Results Analytical Method ND 52 55 Analytical Method ND 92 Analytical Method 0.0012 0.0015 ND 0.20 Analytical Method	Units mg/L mg/L %. %. hod: EPA 8 ug/L %. hod: EPA 6 mg/L mg/L mg/L mg/L hod: EPA 6 ug/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 015/8021 50.0 44-148 020 Preparation Met 0.0010 0.0010 0.0010 0.0050 020 Preparation Met	DF aration M 1 1 1 1 1 1 hod: EP/ 1 hod: EP/ 1 1 1	Prepared ethod: EPA 3535 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 01/19/17 13:07 A 3010 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 A 3005A 01/24/17 09:53 01/24/17 09:53	Analyzed 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/29/17 19:28 01/20/17 06:32 01/20/17 06:32 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09 02/12/17 16:09	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	Qual

7439-97-6

Qual



ANALYTICAL RESULTS

Project:

7470 Mercury

Benzene

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Parameters Results Units Report Limit DF P

Mercury ND ug/L 0.20 1 01/24/17 08:59 01

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved ND ug/L 0.20 1 01/24/17 09:49 01/24/17 18:48 7439-97-6

Analytical Method: EPA 7470 Preparation Method: EPA 7470

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	0.45	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	208-96-8
Anthracene	0.23	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	207-08-9
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	206-44-0
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	85-01-8
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	121	%.	25-150	1	01/21/17 12:15	01/30/17 22:25	321-60-8
Terphenyl-d14 (S)	114	%.	25-150	1	01/21/17 12:15	01/30/17 22:25	1718-51-0
8260 MSV Low Level	Analytical Meth	od: EPA 5030B/826	0				

Acetone	12.0	ug/L

Bromodichloromethane	ND	ug/L	0.50	1
Bromoform	ND	ug/L	0.50	1
Bromomethane	ND	ug/L	0.50	1
2-Butanone (MEK)	ND	ug/L	2.0	1
Carbon disulfide	ND	ug/L	1.0	1
Carbon tetrachloride	ND	ug/L	0.50	1
Chlorobenzene	ND	ug/L	0.50	1
Chloroethane	ND	ug/L	0.50	1
Chloroform	ND	ug/L	0.50	1
Chloromethane	ND	ug/L	0.50	1
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1
Dibromochloromethane	ND	ug/L	0.50	1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1
Dichlorodifluoromethane	ND	ug/L	1.0	1
1,1-Dichloroethane	ND .	ug/L	0.50	1
1,2-Dichloroethane	ND	ug/L	0.50	1

ND

ug/L

01/19/17 14:55	67-64-1
01/19/17 14.55	01-04-1
01/19/17 14:55	71-43-2
01/19/17 14:55	75-27-4
01/19/17 14:55	75-25-2
01/19/17 14:55	74-83-9
01/19/17 14:55	78-93-3
01/19/17 14:55	75-15-0
01/19/17 14:55	56-23-5
01/19/17 14:55	108-90-7
01/19/17 14:55	75-00-3
01/19/17 14:55	67-66-3
01/19/17 14:55	74-87-3
01/19/17 14:55	96-12-8
01/19/17 14:55	124-48-1
01/19/17 14:55	106-93-4

01/19/17 14:55 75-71-8 01/19/17 14:55 75-34-3 01/19/17 14:55 107-06-2

REPORT OF LABORATORY ANALYSIS

4.0

0.50

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C9

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ANALYTICAL RESULTS

Project: PUMA

Gasoline Range Organics

4-Bromofluorobenzene (S)

Date: 02/14/2017 09:05 AM

Surrogates

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-110AB	Lab ID: 204	8890003	Collected: 01/17/1	7 10:49	Received. 01	/18#514#8\V	iatrix: Corter	
Parameters	Results	Units	Report Limit	DF	Prepa.	Analyzed	000 S No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260			CO LICENCY		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:55		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:55		
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:55	· ·	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 14:55		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:55		
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:55		
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:55		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 14:55		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 14:55		
Styrene	ND	ug/L	1.0	1		01/19/17 14:55		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:55		
Tetrachloroethene	ND	ug/L ug/L	0.50	1				
Toluene	ND	_	0.50	1		01/19/17 14:55		
1,1,1-Trichloroethane		ug/L				01/19/17 14:55		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:55		
* *	ND	ug/L	0.50	1		01/19/17 14:55		
Trichloroethene	ND	ug/L	0.50	1		01/19/17 14:55		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:55		
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:55		
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 14:55		
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:55	95-47-6	
Surrogates	25	n/	70.400			0414014744.55	1000 50 50	
Dibromofluoromethane (S)	95	%.	72-126	1		01/19/17 14:55		
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/19/17 14:55		
Toluene-d8 (S)	107	%.	79-119	1		01/19/17 14:55	2037-26-5	
Sample: MW-110B2	Lab ID: 204	8890004	Collected: 01/17/	17 11:38	Received: 01	/18/17 14:45 N	1atrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	aration M	lethod: EPA 3535			
_	,		"					
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1		01/29/17 19:59		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		01/29/17 19:59		
n-Pentacosane (S)	44	%.	16-137	1		01/29/17 19:59		
o-Terphenyl (S)	50	%.	10-121	1	01/19/17 13:07	01/29/17 19:59	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meti	hod: EPA 8	015/8021					

REPORT OF LABORATORY ANALYSIS

50.0

44-148

ND

92

ug/L

01/20/17 06:58

01/20/17 06:58 460-00-4

St. Rose, LA 70087 (504)469-0333



Date: 02/14/2017 09:05 AM

ANALYTICAL RESULTS

Proi	ioc	۴-
t i i O		L-

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890 Sample: MW-110B2 Collected: 01/17/17 11:38 Lab ID: 2048890004 Water Parameters Results Units Report Limit DE CAS No. Qual Analytical Method: EPA 6020 Preparation Method: EPA 3010 6020 MET ICPMS ND Arsenic 0.0010 01/24/17 08:30 02/12/17 16:13 7440-38-2 mg/L Chromium ND 0.0010 01/24/17 08:30 02/12/17 16:13 7440-47-3 mg/L ND Lead mg/L 0.0010 01/24/17 08:30 02/12/17 16:13 7439-92-1 Vanadium ΝD 0.0050 01/24/17 08:30 02/12/17 16:13 7440-62-2 mg/L 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND 1.0 01/24/17 09:53 02/12/17 19:18 7440-38-2 ug/L Chromium, Dissolved ND 01/24/17 09:53 02/12/17 19:18 7440-47-3 ug/L 1.0 Lead, Dissolved ND 01/24/17 09:53 02/12/17 19:18 7439-92-1 ug/L 1.0 Vanadium, Dissolved ND ug/L 5.0 01/24/17 09:53 02/12/17 19:18 7440-62-2 Analytical Method: EPA 7470 Preparation Method: EPA 7470 7470 Mercury Mercury ND 0.20 01/24/17 08:59 01/24/17 18:30 7439-97-6 ug/L 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury, Dissolved ND 0.20 01/24/17 09:49 01/24/17 18:50 7439-97-6 ug/L 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene ND ug/L 0.1001/21/17 12:15 01/30/17 22:45 83-32-9 ND Acenaphthylene ug/L 0.1001/21/17 12:15 01/30/17 22:45 208-96-8 1 Anthracene ND 01/21/17 12:15 01/30/17 22:45 120-12-7 ug/L 0.101 Benzo(a)anthracene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 22:45 56-55-3 Benzo(a)pyrene ND 01/21/17 12:15 01/30/17 22:45 50-32-8 0.10 ug/L 1 Benzo(b)fluoranthene ND 01/21/17 12:15 01/30/17 22:45 205-99-2 0.10 ug/L 1 Benzo(g,h,i)perylene ND 0.10 01/21/17 12:15 01/30/17 22:45 191-24-2 ug/L 1 Benzo(k)fluoranthene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 22:45 207-08-9 Chrysene ND 0.10 01/21/17 12:15 01/30/17 22:45 218-01-9 ug/L 1 Dibenz(a,h)anthracene ND ug/L 0.10 01/21/17 12:15 01/30/17 22:45 53-70-3 1 Fluoranthene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 22:45 206-44-0 Fluorene ND ug/L 0.10 01/21/17 12:15 01/30/17 22:45 86-73-7 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 01/21/17 12:15 01/30/17 22:45 193-39-5 2-Methylnaphthalene ND 01/21/17 12:15 01/30/17 22:45 91-57-6 ug/L 0.10 Naphthalene ND 0.10 01/21/17 12:15 01/30/17 22:45 91-20-3 ug/L Phenanthrene ND 0.10 01/21/17 12:15 01/30/17 22:45 85-01-8 ug/L 1 Pyrene ND 0.10 1 ug/L Surrogates 2-Fluorobiphenyl (S) 117 %. 25-150 1 01/21/17 12:15 01/30/17 22:45 321-60-8 Terphenyl-d14 (S) 123 %. 25-150 1 01/21/17 12:15 01/30/17 22:45 1718-51-0 Analytical Method: EPA 5030B/8260 8260 MSV Low Level Acetone 4.3 ug/L 4.0 1 01/19/17 15:13 67-64-1 C9 ND 0.50 Benzene ug/L 1 01/19/17 15:13 71-43-2 Bromodichloromethane ND 0.50 ug/L 1 01/19/17 15:13 75-27-4 Bromoform ND 0.50 ug/L 1 01/19/17 15:13 75-25-2 Bromomethane ND 0.50 ug/L 1 01/19/17 15:13 74-83-9 2-Butanone (MEK) ND 01/19/17 15:13 78-93-3

REPORT OF LABORATORY ANALYSIS

2.0

ug/L

1000 Riverbend Blvd - Suite F St. Rose, LA 70087

(504)469-0333



ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-110B2	Lab ID: 204	8890004	Collected: 01/17/1	7 11:38	Received: 01/18/17/14:45 Metay: Water
Parameters	Results	Units	Report Limit	DF	Received 01/18/17/14:45 Mary Water Prepare CAS No. Qual
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260		
Carbon disulfide	ND	ug/L	1.0	1	01/19/17 15:13 75-15-0
Carbon tetrachloride	ND	ug/L	0.50	1	01/19/17 15:13 56-23-5
Chlorobenzene	ND	ug/L	0.50	1	01/19/17 15:13 108-90-7
Chloroethane	ND	ug/L	0.50	1	01/19/17 15:13 75-00-3
Chloroform	ND	ug/L	0.50	1	01/19/17 15:13 67-66-3
Chloromethane	ND	ug/L	0.50	1	01/19/17 15:13 74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/19/17 15:13 96-12-8
Dibromochloromethane	ND	ug/L	0.50	1	01/19/17 15:13 124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/19/17 15:13 106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/19/17 15:13 75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1	01/19/17 15:13 75-34-3
1,2-Dichloroethane	ND	ug/L	0.50	1	01/19/17 15:13 107-06-2
1,1-Dichloroethene	ND	ug/L	0.50	1	01/19/17 15:13 75-35-4
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/19/17 15:13 156-59-2
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/19/17 15:13 156-60-5
1,2-Dichloropropane	ND	ug/L	0.50	1	01/19/17 15:13 78-87-5
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/19/17 15:13 10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/19/17 15:13 10061-02-6
Ethylbenzene	ND	ug/L	0.50	1	01/19/17 15:13 100-41-4
2-Hexanone	ND	ug/L	1.0	1	01/19/17 15:13 591-78-6
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/19/17 15:13 98-82-8
Methyl acetate	ND	ug/L	2.0	1	01/19/17 15:13 79-20-9
Methylene Chloride	ND	ug/L	0.50	1	01/19/17 15:13 75-09-2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/19/17 15:13 108-10-1
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/19/17 15:13 1634-04-4
Styrene	ND	ug/L	1.0	1	01/19/17 15:13 100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/19/17 15:13 79-34-5
Tetrachloroethene	ND	ug/L	0.50	1	01/19/17 15:13 127-18-4
Toluene	ND	ug/L	0.50	1	01/19/17 15:13 108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/19/17 15:13 71-55-6
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/19/17 15:13 79-00-5
Trichloroethene	ND	ug/L	0.50	1	01/19/17 15:13 79-01-6
Trichlorofluoromethane	ND	ug/L	0.50	1	01/19/17 15:13 75-69-4
Vinyl chloride	ND	ug/L	0.50	1	01/19/17 15:13 75-01-4
m&p-Xylene	ND	ug/L	2.0	1	01/19/17 15:13 179601-23-1
o-Xylene	ND	ug/L	1.0	1	01/19/17 15:13 95-47-6
Surrogates	· · · ·	~5	1.0		5 11 15 15 15 15 15 15 15 15 15 15 15 15
Dibromofluoromethane (S)	93	%.	72-126	1	01/19/17 15:13 1868-53-7
4-Bromofluorobenzene (S)	100	%.	68-124	1	01/19/17 15:13 460-00-4
Toluene-d8 (S)	106	%.	79-119	1	01/19/17 15:13 2037-26-5

REPORT OF LABORATORY ANALYSIS



Date: 02/14/2017 09:05 AM

ANALYTICAL RESULTS

PUMA TERMINAL CW SAMPLING Project: 2048890 Pace Project No .: Sample: MW-111A Collected: 01/17/17 12:36 Lab ID: 2048890005 Water Parameters Results Qual Units Report Limit AS No. 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: ND Diesel Range Organic (C10-C28) 0.50 1 mg/L 01/19/17 13:07 Oil Range Organics (>C28-C40) ND 01/19/17 13:07 01/29/17 20:30 1.0 1 mg/L Surrogates n-Pentacosane (S) 79 %. 16-137 1 01/19/17 13:07 01/29/17 20:30 629-99-2 o-Terphenyl (S) 66 %. 10-121 1 01/19/17 13:07 01/29/17 20:30 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/20/17 07:24 Surrogates 4-Bromofluorobenzene (S) 94 %. 44-148 1 01/20/17 07:24 460-00-4 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 Arsenic 0.0039 mg/L 0.0010 01/24/17 08:30 02/12/17 16:17 7440-38-2 Chromium 0.0047 0.0010 01/24/17 08:30 02/12/17 16:17 7440-47-3 mg/L 1 0.0017 0.0010 Lead mg/L 1 01/24/17 08:30 02/12/17 16:17 7439-92-1 0.0050 01/24/17 08:30 02/12/17 16:17 7440-62-2 Vanadium ND mg/L 1 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved 1.5 1.0 01/24/17 09:53 02/12/17 19:22 7440-38-2 ug/L Chromium, Dissolved ND ug/L 1.0 01/24/17 09:53 02/12/17 19:22 7440-47-3 Lead, Dissolved ND 01/24/17 09:53 02/12/17 19:22 7439-92-1 ug/L 1.0 1 Vanadium, Dissolved 01/24/17 09:53 02/12/17 19:22 7440-62-2 ND ug/L 5.0 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury ND ug/L 0.20 01/24/17 08:59 01/24/17 18:32 7439-97-6 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury, Dissolved ND ug/L 0.20 01/24/17 09:49 01/24/17 18:57 7439-97-6 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene ND ug/L 0.10 01/21/17 12:15 01/30/17 23:05 83-32-9 Acenaphthylene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 23:05 208-96-8 Anthracene ND uq/L 0.10 01/21/17 12:15 01/30/17 23:05 120-12-7 1 Benzo(a)anthracene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 23:05 56-55-3 Benzo(a)pyrene 01/21/17 12:15 01/30/17 23:05 50-32-8 ND ug/L 0.10 1 Benzo(b)fluoranthene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 23:05 205-99-2 Benzo(g,h,i)perylene ND 0.10 01/21/17 12:15 01/30/17 23:05 191-24-2 ug/L Benzo(k)fluoranthene ND 0.10 01/21/17 12:15 01/30/17 23:05 207-08-9 ug/L 1 Chrysene ND 0.10 ug/L 1 Dibenz(a,h)anthracene ND 0.10 01/21/17 12:15 01/30/17 23:05 53-70-3 ua/L 1 Fluoranthene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 23:05 206-44-0 Fluorene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 23:05 86-73-7 indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 23:05 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 23:05 91-57-6 Naphthalene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 23:05 91-20-3 Phenanthrene ND ug/L 0.10 01/21/17 12:15 01/30/17 23:05 85-01-8



ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890 Sample: MW-111A Lab ID: 2048890005 Collected: 01/17/17 12:36 Red Parameters Results Pr€ Units Report Limit Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 35 Pyrene ND 0.10 01/21/17 12:15 01/30/17 129-00-0 ug/L Surrogates 2-Fluorobiphenyl (S) 121 %. 25-150 1 01/21/17 12:15 01/30/17 23:05 321-60-8 Terphenyl-d14 (S) 109 %. 25-150 1 01/21/17 12:15 01/30/17 23:05 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone ND na/L 4.0 1 01/19/17 15:31 67-64-1 Benzene ND ug/L 0.50 1 01/19/17 15:31 71-43-2 Bromodichloromethane ND 0.50 01/19/17 15:31 75-27-4 ug/L 1 Bromoform ND 0.50 01/19/17 15:31 75-25-2 ug/L 1 Bromomethane ND ug/L 0.50 1 01/19/17 15:31 74-83-9 2-Butanone (MEK) ND ug/L 2.0 1 01/19/17 15:31 78-93-3 Carbon disulfide ND ug/L 1.0 01/19/17 15:31 75-15-0 Carbon tetrachloride ND ug/L 0.50 01/19/17 15:31 56-23-5 Chlorobenzene ND 0.50 01/19/17 15:31 108-90-7 ug/L 1 Chloroethane ND 0.50 01/19/17 15:31 75-00-3 ug/L Chloroform ND ug/L 0.50 01/19/17 15:31 67-66-3 Chloromethane ND ug/L 0.50 1 01/19/17 15:31 74-87-3 1,2-Dibromo-3-chloropropane ND 0.20 01/19/17 15:31 96-12-8 ug/L 1 ug/L Dibromochloromethane ND 0.50 01/19/17 15:31 124-48-1 1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 01/19/17 15:31 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 01/19/17 15:31 75-71-8 ND 1.1-Dichloroethane ug/L 0.50 1 01/19/17 15:31 75-34-3 ND 0.50 1,2-Dichloroethane ug/L 1 01/19/17 15:31 107-06-2 1,1-Dichloroethene ND 0.50 ug/L 01/19/17 15:31 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/19/17 15:31 156-59-2 trans-1,2-Dichloroethene MD ug/L 0.50 1 01/19/17 15:31 156-60-5 ND 0.50 01/19/17 15:31 78-87-5 1.2-Dichloropropane ug/L 1 cis-1,3-Dichloropropene ND ug/L 0.50 01/19/17 15:31 10061-01-5 1 trans-1,3-Dichloropropene ND 0.50 ug/L 01/19/17 15:31 10061-02-6 1 Ethylbenzene ND 0.50 100-41-4 ug/L 1 01/19/17 15:31 2-Hexanone ND ug/L 591-78-6 1.0 1 01/19/17 15:31 Isopropylbenzene (Cumene) ND ug/L 01/19/17 15:31 98-82-8 1.0 1 Methyl acetate ND 2.0 01/19/17 15:31 79-20-9 ug/L 1 Methylene Chloride ND ug/L 0.50 01/19/17 15:31 75-09-2 1 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 01/19/17 15:31 108-10-1 Methyl-terf-butyl ether ND ug/L 0.50 01/19/17 15:31 1634-04-4 1 Styrene ND ua/L 1.0 1 01/19/17 15:31 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 1 01/19/17 15:31 79-34-5 Tetrachloroethene ND ug/L 0.50 1 01/19/17 15:31 127-18-4 Toluene ND ug/L 0.50 1 01/19/17 15:31 108-88-3 1,1,1-Trichloroethane ND 0.50 01/19/17 15:31 71-55-6 ug/L 1 1,1,2-Trichloroethane ND ug/L 0.50 01/19/17 15:31 79-00-5 Trichloroethene ND ug/L 0.50 1 01/19/17 15:31 79-01-6 Trichlorofluoromethane ND ug/L 0.50 1 01/19/17 15:31 75-69-4 Vinyl chloride ND ug/L 0.50 01/19/17 15:31 75-01-4 m&p-Xylene ND ug/L 2.0 01/19/17 15:31 179601-23-1



ANALYTICAL RESULTS

Ρ	roject:	

PUMA TERMINAL CW SAMPLING

Pace Project No.:

Date: 02/14/2017 09:05 AM

2048890 Sample: MW-111A Lab ID: 2048890005 Collected: 01/17/17 12:36 Rece Parameters Results Units Report Limit DF Prep Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 o-Xylene ND ug/L 1.0 Surrogates 01/19/17 15:31 1868-53-7 Dibromofluoromethane (S) 96 %. 72-126 1 4-Bromofluorobenzene (S) 100 68-124 01/19/17 15:31 460-00-4 %. 1 Toluene-d8 (S) 105 %. 79-119 1 01/19/17 15:31 2037-26-5

Sample: MW-114A	Lab ID: 204	B890006	Collected: 01/17/1	7 16:21	Received: 01	/18/17 14:45 N	latrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua		
8015M DRO/ORO Organics	Analytical Meth	Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 21:00				
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		01/29/17 21:00				
n-Pentacosane (S)	17	%.	16-137	1		01/29/17 21:00				
o-Terphenyl (S)	50	%.	10-121	1	01/19/17 13:07	01/29/17 21:00	84-15-1			
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 86	015/8021							
Gasoline Range Organics <i>Surrogates</i>	ND	ug/L	50.0	1		01/20/17 07:51				
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/20/17 07:51	460-00-4			
6020 MET ICPMS	Analytical Meth	nod: EPA 6	020 Preparation Meth	nod: EP	A 3010					
Arsenic	0.0051	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7440-38-2			
Chromium	0.024	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7440-47-3			
Lead	0.012	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7439-92-1			
Vanadium	0.041	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:21	7440-62-2			
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 6	020 Preparation Meth	nod: EP	A 3005A					
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7440-38-2			
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7440-47-3			
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7439-92-1			
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:26	7440-62-2			
7470 Mercury	Analytical Meth	nod: EPA 7	470 Preparation Meth	nod: EF	A 7470					
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:34	7439-97-6			
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 7	470 Preparation Met	nod: EF	'A 7470					
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:59	7439-97-6			
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparati	ion Met	hod: EPA 3510					
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	83-32-9			
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	208-96-8			
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	120-12-7			
Benzo(a)anthracene	ND	ug/L	0,10	1	01/21/17 12:15	01/30/17 23:25	56-55-3			

REPORT OF LABORATORY ANALYSIS

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St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-114A Lab ID: 2048890006 Collected: 01/17/17 16:21 Receive Prepared Parameters Results Units Report Limit DF Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 ND 0.10 01/21/17 12:15 01/30/17 23:25 50-32-8 Benzo(a)pyrene ug/L 01/21/17 12:15 01/30/17 23:25 205-99-2 ND 0.10 Benzo(b)fluoranthene ug/L 01/21/17 12:15 01/30/17 23:25 191-24-2 Benzo(g,h,i)perylene ND 0.10 ug/L 1 01/21/17 12:15 01/30/17 23:25 207-08-9 ND Benzo(k)fluoranthene ug/L 0.10 1 ND 0.10 01/21/17 12:15 01/30/17 23:25 218-01-9 Chrysene ug/L 1 NΩ 0.1001/21/17 12:15 01/30/17 23:25 53-70-3 Dibenz(a,h)anthracene ug/L NΠ 0.10 01/21/17 12:15 01/30/17 23:25 206-44-0 Fluoranthene ua/L Fluorene ND ug/L 0.10 01/21/17 12:15 01/30/17 23:25 86-73-7 ND 0.10 01/21/17 12:15 01/30/17 23:25 193-39-5 Indeno(1,2,3-cd)pyrene ug/L 2-Methylnaphthalene ND 0.10 01/21/17 12:15 01/30/17 23:25 91-57-6 1 ug/L Naphthalene ND 0.10 01/21/17 12:15 01/30/17 23:25 91-20-3 ug/L 1 Phenanthrene ND 0.10 01/21/17 12:15 01/30/17 23:25 85-01-8 ug/L 1 Pyrene ND ug/L 0.10 1 01/21/17 12:15 01/30/17 23:25 129-00-0 Surrogates 2-Fluorobiphenyl (S) 106 % 25-150 1 01/21/17 12:15 01/30/17 23:25 321-60-8 Terphenyl-d14 (S) 107 % 25-150 1 01/21/17 12:15 01/30/17 23:25 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 ND 4.0 1 01/19/17 15:49 67-64-1 Acetone ug/L C9ND 0.50 01/19/17 15:49 71-43-2 Benzene ug/L 1 Bromodichloromethane ND 0.50 01/19/17 15:49 75-27-4 ug/L Bromoform ND 0.50 01/19/17 15:49 75-25-2 ug/L 1 Bromomethane ND ug/L 0.50 1 01/19/17 15:49 74-83-9 2-Butanone (MEK) ND ug/L 2.0 01/19/17 15:49 78-93-3 Carbon disulfide ND ug/L 1.0 01/19/17 15:49 75-15-0 Carbon tetrachloride ND ug/L 0.50 01/19/17 15:49 56-23-5 Chlorobenzene ND ug/L 0.50 1 01/19/17 15:49 108-90-7 Chloroethane ND ug/L 0.50 1 01/19/17 15:49 75-00-3 01/19/17 15:49 67-66-3 Chloroform ND ug/L 0.50 1 Chloromethane ND ug/L 0.501 01/19/17 15:49 74-87-3 01/19/17 15:49 96-12-8 1,2-Dibromo-3-chioropropane ND 0.20 ug/L 1 Dibromochloromethane ND 0.50 01/19/17 15:49 124-48-1 ug/L 1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 01/19/17 15:49 106-93-4 Dichlorodifluoromethane ND 01/19/17 15:49 75-71-8 ug/L 1.0 1 1.1-Dichloroethane ND 0.50 01/19/17 15:49 75-34-3 ug/L 1 1,2-Dichloroethane ND 0.50 01/19/17 15:49 107-06-2 ug/L 1 ND 0.50 1.1-Dichloroethene ug/L 1 01/19/17 15:49 75-35-4 cis-1.2-Dichloroethene ND ug/L 1.0 01/19/17 15:49 156-59-2 1 ND 0.50 01/19/17 15:49 156-60-5 trans-1,2-Dichloroethene ug/L 1 1.2-Dichloropropane ND 0.50 01/19/17 15:49 78-87-5 ug/L 1 cis-1.3-Dichloropropene ND ug/L 0.50 1 01/19/17 15:49 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 1 01/19/17 15:49 10061-02-6 Ethylbenzene ND ug/L 0.50 1 01/19/17 15:49 100-41-4 ND 2-Hexanone ug/L 1.0 1 01/19/17 15:49 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 01/19/17 15:49 98-82-8 Methyl acetate ND ug/L 2.0 01/19/17 15:49 79-20-9

REPORT OF LABORATORY ANALYSIS

0.50

ND

ug/L

Methylene Chloride

01/19/17 15:49 75-09-2

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-114A	Lab ID: 20	048890006	Collected: 01/17/1	7 16:21	Received 2018/17 14:45 Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Received 8/17 14:45 Matrix Water Prepared Agalyzadi AS No.	Qual
8260 MSV Low Level	Analytical M	ethod: EPA 50	030B/8260			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/19/17 15:49 108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/19/17 15:49 1634-04-4	
Styrene	ND	ug/L	1.0	1	01/19/17 15:49 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/19/17 15:49 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/19/17 15:49 127-18-4	
Toluene	ND	ug/L	0.50	1	01/19/17 15:49 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/19/17 15:49 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/19/17 15:49 79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/19/17 15:49 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/19/17 15:49 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/19/17 15:49 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/19/17 15:49 179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/19/17 15:49 95-47-6	
Surrogates						
Dibromofluoromethane (S)	96	%.	72-126	1	01/19/17 15:49 1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1	01/19/17 15:49 460-00-4	
Toluene-d8 (S)	106	%.	79-119	1	01/19/17 15:49 2037-26-5	

Sample: DUP006	Lab ID: 204	8890007	Collected: 01/17/1	7 00:0	0 Received: 01	/18/17 14:45 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	15B Modified Prepa	ration	Method: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 21:31		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 21:31		
n-Pentacosane (S)	51	%.	16-137	1	01/19/17 13:07	01/29/17 21:31	629-99-2	
o-Terphenyl (S)	51	%.	10-121	1	01/19/17 13:07	01/29/17 21:31	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	15/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/20/17 11:04		
4-Bromofluorobenzene (S)	93	%.	44-148	1		01/20/17 11:04	460-00-4	
6020 MET ICPMS	Analytical Met	nod: EPA 60	20 Preparation Met	nod: E	PA 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:25	7440-38-2	
Chromium	0.049	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:25	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:25	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:25	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	nod: EPA 60	020 Preparation Met	nod: E	PA 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:29	7440-38-2	
Chromium, Dissolved	49.1	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:29	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:29	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:29	7440-62-2	

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Date: 02/14/2017 09:05 AM

2048890

Pace Project No.: Sample: DUP006 Lab ID: 2048890007 Collected: 01/17/17 00:00 Received:

Results Units DF Prepared Qual Parameters Report Limit

raigneters	Kesuits	Units	Report Limit	ÐΓ	riepaieu	- COL	P. 6 10.	Quai
7470 Mercury	Analytical Meth	od: EPA 747	O Preparation Meth	od: EF	PA 7470			
Mercury	1.8	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:37	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 747	0 Preparation Meth	od: EF	PA 7470			
Mercury, Dissolved	0.26	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:01	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	od: EPA 827	0 by SIM Preparation	on Met	thod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1		01/30/17 23:45		
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	129-00-0	
Surrogates		J						
2-Fluorobiphenyl (S)	111	%.	25-150	1	01/21/17 12:15	01/30/17 23:45	321-60-8	
Terphenyl-d14 (S)	116	%.	25-150	1	01/21/17 12:15	01/30/17 23:45	1718-51-0	
8260 MSV Low Level	Analytical Meth	nod: EPA 503	0B/8260					
Acetone	7.4	ug/L	4.0	1		01/19/17 16:07	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 16:07	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 16:07	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 16:07	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 16:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 16:07	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 16:07		
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 16:07	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 16:07	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 16:07	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 16:07		
Chloromethane	ND	ug/L	0.50	1		01/19/17 16:07		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 16:07		
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 16:07		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 16:07		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 16:07		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:07		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:07		
.,		-3	2.30	•			· · · · · · · -	

REPORT OF LABORATORY ANALYSIS

(504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: DUP006 Lab ID: 2048890007 Collected: 01/17/17 00:00 Received **Parameters** Results Units Report Limit DF Prepared Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 ND 1,1-Dichloroethene ug/L 0.50 1 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/19/17 16:07 156-59-2 trans-1,2-Dichloroethene ND ug/L 0.50 1 01/19/17 16:07 156-60-5 1,2-Dichloropropane ND ug/L 0.50 1 01/19/17 16:07 78-87-5 cis-1,3-Dichloropropene ND ug/L 0.50 1 01/19/17 16:07 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 1 01/19/17 16:07 10061-02-6 Ethylbenzene ND ug/L 0.50 1 01/19/17 16:07 100-41-4 2-Hexanone ND 01/19/17 16:07 591-78-6 ug/L 1.0 1 Isopropylbenzene (Cumene) ND ug/L 1.0 1 01/19/17 16:07 98-82-8 Methyl acetate ND 2.0 ug/L 1 01/19/17 16:07 79-20-9 Methylene Chloride NΩ 01/19/17 16:07 75-09-2 0.50 uo/L 1 4-Methyl-2-pentanone (MIBK) 01/19/17 16:07 108-10-1 NΩ ug/L 1.0 Methyl-tert-butyl ether 4.7 0.50 01/19/17 16:07 1634-04-4 ug/L Styrene ND ug/L 1.0 01/19/17 16:07 100-42-5 1,1,2,2-Tetrachloroethane ND 0.50 01/19/17 16:07 79-34-5 ug/L Tetrachloroethene ND 0.50 01/19/17 16:07 127-18-4 ua/L Toluene ND 0.50 01/19/17 16:07 108-88-3 ug/L 1,1,1-Trichloroethane ND ug/L 0.50 1 01/19/17 16:07 71-55-6 1,1,2-Trichloroethane ND uġ/L 0.50 1 01/19/17 16:07 79-00-5 Trichloroethene 0.84 ug/L 0.50 01/19/17 16:07 79-01-6 1 Trichlorofluoromethane ND 01/19/17 16:07 75-69-4 ug/L 0.50 1 Vinyl chloride ND 01/19/17 16:07 75-01-4 ug/L 0.50 1 m&p-Xylene ND ug/L 2.0 1 01/19/17 16:07 179601-23-1 o-Xylene ND 01/19/17 16:07 95-47-6 ug/L 1.0 1 Surrogates Dibromofluoromethane (S) 94 %. 72-126 1 01/19/17 16:07 1868-53-7 4-Bromofluorobenzene (S) 98 %. 01/19/17 16:07 460-00-4 68-124 1 Toluene-d8 (S) 79-119 106 %. 01/19/17 16:07 2037-26-5

Sample: MW-75B2	Lab ID: 204	8890008	Collected: 01/17/1	7 14:50	Received: 01	/18/17 14:45 N	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meti	hod: EPA 80	015B Modified Prepa	ration M	Method: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 22:02		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 22:02		
n-Pentacosane (S)	51	%.	16-137	1	01/19/17 13:07	01/29/17 22:02	629-99-2	
o-Terphenyl (S)	56	%.	10-121	1	01/19/17 13:07	01/29/17 22:02	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/20/17 11:31		
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/20/17 11:31	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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PUMA TERMINAL CW SAMPLING

Pace Project No.:

Date: 02/14/2017 09:05 AM

2048890

Pace Project No.: 2048890						-10	/4/	
Sample: MW-75B2	Lab ID:	2048890008	Collected: 01/17/	17 14:50	Receiv (//)	18/17 14:15 N	Water	
Parameters	Results	Units	Report Limit	DF	Prepared	18/17 14 15 O ALCERCI	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 60	020 Preparation Met	hod: EP	A 3010		•	
Arsenic	NE	D mg/L	0.0010	1	01/24/17 08:30	02/12/17 15:41	7440-38-2	R1
Chromium	0.04	6 mg/L	0.0010	1	01/24/17 08:30	02/12/17 15:41	7440-47-3	M1,R1
Lead	NE	-	0.0010	1	01/24/17 08:30	02/12/17 15:41	7439-92-1	R1
Vanadium	NE	D mg/L	0.0050	1	01/24/17 08:30	02/12/17 15:41	7440-62-2	M1,R1
6020 MET ICPMS, Dissolved (LF)	Analytical	Method: EPA 60	020 Preparation Met	lhod: EP.	A 3005A			
Arsenic, Dissolved	NI	D ug/L	1.0	1	01/24/17 09:53	02/12/17 18:46	7440-38-2	
Chromium, Dissolved	47.5	9 ug/L	1.0	1	01/24/17 09:53	02/12/17 18:46	7440-47-3	
Lead, Dissolved	N	D ug/L	1.0	1	01/24/17 09:53	02/12/17 18:46	7439-92-1	
Vanadium, Dissolved	N	•	5.0	1		02/12/17 18:46		M1
7470 Mercury	Analytical	Method: EPA 74	470 Preparation Mel	thod: EP	A 7470			
Mercury	1.	9 ug/L	0.20	1	01/24/17 08:59	01/24/17 18:14	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical	Method: EPA 74	470 Preparation Me	thod: EP	A 7470			
Mercury, Dissolved	NI	O ug/L	0.20	1	01/24/17 09:49	01/24/17 19:03	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical	Method: EPA 82	270 by SIM Prepara	tion Met	hod: EPA 3510			
Acenaphthene	N	O ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	83-32-9	
Acenaphthylene	N	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	208-96-8	
Anthracene	N	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	120-12-7	M1
Benzo(a)anthracene	N	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	56-55-3	
Benzo(a)pyrene	Ni	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	50-32-8	
Benzo(b)fluoranthene	Ni	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	205-99-2	
Benzo(g,h,i)perylene	N	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	191-24-2	
Benzo(k)fluoranthene	NI	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	207-08-9	
Chrysene	NI	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	218-01-9	
Dibenz(a,h)anthracene	NI	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	53-70-3	
Fluoranthene	NI	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	206-44-0	
Fluorene	N	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	86-73-7	
Indeno(1,2,3-cd)pyrene	N	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	193-39-5	
2-Methylnaphthalene	. N	D ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	91-57-6	
Naphthalene	N		0.10	1	01/23/17 11:36	01/30/17 19:06	91-20-3	
Phenanthrene	N		0.10			01/30/17 19:06		
Pyrene	NI	•	0.10	1		01/30/17 19:06		
Surrogates			0,0	,	0 1,20,11	0 1,00,11 10.00	.25 00 0	
2-Fluorobiphenyl (S)	5	6 %.	25-150	1	01/23/17 11:36	01/30/17 19:06	321-60-8	
Terphenyl-d14 (S)	6		25-150			01/30/17 19:06		
8260 MSV Low Level	Analytical	Method: EPA 59	030B/8260					
Acetone	NI	D ug/L	4.0	1		01/19/17 14:00	67-64-1	C9
Benzene	NI	-	0.50			01/19/17 14:00		
Bromodichloromethane	NI	9	0.50			01/19/17 14:00		
Bromoform	N	•	0.50			01/19/17 14:00		
Bromomethane	Ni	-	0.50			01/19/17 14:00		
2-Butanone (MEK)	Ni	-	2.0			01/19/17 14:00		
z zatanono (mzrty	141	- Ug/L	2.0	1		21/10/11 17:00	, 0.00-0	



ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-75B2 Lab ID: 2048890008 Collected: 01/17/17 14:50 **Parameters** Results Units Report Limit DF CAS No. Qual Analytical Method: EPA 5030B/8260 8260 MSV Low Level ND 01/19/17 14:00 75-15-0 Carbon disulfide ug/L 1.0 1 ND 0.50 01/19/17 14:00 56-23-5 Carbon tetrachloride ug/L 1 01/19/17 14:00 108-90-7 Chlorobenzene ND ug/L 0.50 1 01/19/17 14:00 75-00-3 Chloroethane ND ug/L 0.50 1 01/19/17 14:00 67-66-3 ND 0.50 Chloroform ug/L 1 01/19/17 14:00 74-87-3 ND 0.50 Chloromethane ua/L 1 MΩ 0.20 01/19/17 14:00 96-12-8 1,2-Dibromo-3-chloropropane ua/L 1 Dibromochloromethane ND 0.50 1 01/19/17 14:00 124-48-1 ua/L 01/19/17 14:00 106-93-4 1.2-Dibromoethane (EDB) ND ug/L 1.0 1 01/19/17 14:00 75-71-8 Dichlorodifluoromethane ND 1.0 ug/L 1 ND 0.50 01/19/17 14:00 75-34-3 1.1-Dichloroethane 1 ug/L 1,2-Dichloroethane ND 0.50 01/19/17 14:00 107-06-2 1 ug/L 1,1-Dichloroethene ND ug/L 0.50 1 01/19/17 14:00 75-35-4 cis-1,2-Dichloroethene ND 1.0 1 01/19/17 14:00 156-59-2 ug/L trans-1,2-Dichloroethene ND 0.50 1 01/19/17 14:00 156-60-5 ug/L 1,2-Dichloropropane ND ug/L 0.50 1 01/19/17 14:00 78-87-5 cis-1,3-Dichloropropene ND ug/L 0.50 1 01/19/17 14:00 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 1 01/19/17 14:00 10061-02-6 0.50 01/19/17 14:00 100-41-4 Ethylbenzene ND uq/L 1 ND 01/19/17 14:00 591-78-6 2-Hexanone ug/L 1.0 Isopropylbenzene (Cumene) ND 1.0 01/19/17 14:00 98-82-8 ug/L Methyl acetate ND 2.0 01/19/17 14:00 79-20-9 ug/L 1 Methylene Chloride ND ug/L 0.50 01/19/17 14:00 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 01/19/17 14:00 108-10-1 Methyl-tert-butyl ether 4.7 0.50 01/19/17 14:00 1634-04-4 ug/L Styrene ND ug/L 1.0 1 01/19/17 14:00 100-42-5 M1 1,1,2,2-Tetrachloroethane ND ug/L 0.50 1 01/19/17 14:00 79-34-5 Tetrachloroethene ND ug/L 0.50 1 01/19/17 14:00 127-18-4 Toluene ND ug/L 0.50 1 01/19/17 14:00 108-88-3 1,1,1-Trichloroethane 0.50 01/19/17 14:00 71-55-6 ND ug/L 1 1,1,2-Trichloroethane ND 0.50 1 01/19/17 14:00 79-00-5 ug/L Trichloroethene 0.81 0.50 1 01/19/17 14:00 79-01-6 ug/L Trichlorofluoromethane 0.50 01/19/17 14:00 75-69-4 ND üg/L 1 Vinyl chloride ND 0.50 01/19/17 14:00 75-01-4 1 ug/L 01/19/17 14:00 179601-23-1 NΩ 2.0 1 m&p-Xylene ug/L o-Xylene ND 01/19/17 14:00 95-47-6 ug/L 1.0 1 Surrogates 01/19/17 14:00 1868-53-7 Dibromofluoromethane (S) 95 %. 72-126 1 4-Bromofluorobenzene (S) 01/19/17 14:00 460-00-4 99 %. 68-124 1 Toluene-d8 (S) 107 %. 79-119 1 01/19/17 14:00 2037-26-5

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: FB-011717 Lab ID: 2048890009 Collected: 01/17/17 16:30 Received Parameters Resulfs Units Report Limit DF Prepared Qual 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 01/20/17 13:15 50.0 1 Surrogates 4-Bromofluorobenzene (S) 92 %. 44-148 1 01/20/17 13:15 460-00-4 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 22.0 ug/L 4.0 01/19/17 16:25 67-64-1 C9 1 Benzene ND ug/L 0.50 01/19/17 16:25 71-43-2 1 Bromodichloromethane ND ug/L 0.50 1 01/19/17 16:25 75-27-4 Bromoform ND ug/L 0.50 1 01/19/17 16:25 75-25-2 Bromomethane ND ug/L 0.50 1 01/19/17 16:25 74-83-9 2-Butanone (MEK) ND ug/L 2.0 1 01/19/17 16:25 78-93-3 Carbon disulfide ND ug/L 1.0 1 01/19/17 16:25 75-15-0 Carbon tetrachloride ND 0.50 01/19/17 16:25 56-23-5 ug/L Chlorobenzene 01/19/17 16:25 108-90-7 ND ug/L 0.50 Chloroethane ND 01/19/17 16:25 75-00-3 0.50 ug/L Chloroform 2.0 0.50 ua/L 01/19/17 16:25 67-66-3 Chloromethane ND ug/L 0.5001/19/17 16:25 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 01/19/17 16:25 96-12-8 Dibromochloromethane ND ug/L 0.50 1 01/19/17 16:25 124-48-1 1.2-Dibromoethane (EDB) ND ua/L 1.0 01/19/17 16:25 106-93-4 1 01/19/17 16:25 75-71-8 Dichlorodifluoromethane ND ua/L 1.0 1 1,1-Dichloroethane ND ua/L 0.50 01/19/17 16:25 75-34-3 1 1,2-Dichloroethane ND ug/L 0.50 01/19/17 16:25 107-06-2 1 1,1-Dichloroethene ND ug/L 0.50 1 01/19/17 16:25 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/19/17 16:25 156-59-2 trans-1,2-Dichloroethene ND 0.50 ug/L 1 01/19/17 16:25 156-60-5 1,2-Dichloropropane ND 0.50 ug/L 1 01/19/17 16:25 78-87-5 cis-1,3-Dichloropropene ND ug/L 0.50 01/19/17 16:25 10061-01-5 trans-1,3-Dichloropropene ND 0.50 01/19/17 16:25 10061-02-6 ug/L Ethylbenzene ND ug/L 0.50 01/19/17 16:25 100-41-4 2-Hexanone ND ug/L 1.0 1 01/19/17 16:25 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 01/19/17 16:25 98-82-8 1 Methyl acetate ND ug/L 2.0 01/19/17 16:25 79-20-9 1 Methylene Chloride ND ug/L 0.50 1 01/19/17 16:25 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 01/19/17 16:25 108-10-1 Methyl-tert-butyl ether ND ug/L 0.50 01/19/17 16:25 1634-04-4 Styrene ND ug/L 1.0 01/19/17 16:25 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 01/19/17 16:25 79-34-5 Tetrachloroethene ND ug/L 0.50 01/19/17 16:25 127-18-4 Toluene ND ug/L 0.50 01/19/17 16:25 108-88-3 1.1.1-Trichloroethane ND 0.50 ug/L 1 01/19/17 16:25 71-55-6 1,1,2-Trichloroethane ND ug/L 0.50 01/19/17 16:25 79-00-5 1 Trichloroethene ND ug/L 0.50 01/19/17 16:25 79-01-6 1 Trichlorofluoromethane ND 0.50 ug/L 01/19/17 16:25 75-69-4 1 Vinyl chloride ND 0.50 01/19/17 16:25 75-01-4 ug/L 1 m&p-Xylene ND 2.0 ug/L 01/19/17 16:25 179601-23-1 1 o-Xylene ND ug/L 1.0 01/19/17 16:25 95-47-6



ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.: 20

Date: 02/14/2017 09:05 AM

2048890

race Project No.: 2048690					<u> </u>	Mooran	i 201	
Sample: FB-011717	Lab ID:	2048890009	Collected: 01/17/1	7 16:30	Received 01/	18X17 14 45 Matr		
Parameters	Results	Units	Report Limit	DF	Preparto	Analyzed	esty.	Qual
8260 MSV Low Level	Analytical I	Method: EPA 50	030B/8260		V.	MEO LICENCY		
Surrogates								
Dibromofluoromethane (S)	93	3 %.	72-126	1		01/19/17 16:25 18	868-53-7	
4-Bromofluorobenzene (S)	98	3 %.	68-124	1		01/19/17 16:25 46	60-00-4	
Toluene-d8 (S)	104	%.	79-119	1		01/19/17 16:25 20	37-26-5	

Sample: MW-63A	Lab ID: 204	8890010	Collected: 01/18/1	7 10:3	Received: 01	/18/17 14:45 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qu
8015M DRO/ORO Organics	Analytical Meth	nod: EPA 80	015B Modified Prepar	ration I	Method: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 23:34		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 23:34		
n-Pentacosane (S)	46	%.	16-137	1	01/19/17 13:07	01/29/17 23:34	629-99-2	
o-Terphenyl (S)	45	%.	10-121	1	01/19/17 13:07	01/29/17 23:34	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/20/17 12:49		
4-Bromofluorobenzene (S)	93	%.	44-148	1		01/20/17 12:49	460-00-4	
6020 MET ICPMS	Analytical Metl	nod: EPA 60	020 Preparation Meth	od: EF	PA 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:29	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Metl	nod: EPA 60	020 Preparation Meth	od: EF	PA 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:33	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:33	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:33	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:33	7440-62-2	
7470 Mercury	Analytical Met	nod: EPA 74	170 Preparation Meth	od: EF	PA 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:39	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meti	nod: EPA 74	470 Preparation Meth	od: EF	PA 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:10	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 82	270 by SIM Preparati	on Me	lhod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	50-32-8	

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Date: 02/14/2017 09:05 AM

Sample: MW-63A Lab ID: 2048890010 Collected: 01/18/17 10:33 Water **Parameters** Results Units Report Limit CAS No. Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Benzo(b)fluoranthene ND 0.10 Benzo(g,h,i)perylene ND ug/L 0.10 01/23/17 11:36 01/30/17 20:06 191-24-2 1 Benzo(k)fluoranthene ND ug/L 0.10 1 01/23/17 11:36 01/30/17 20:06 207-08-9 Chrysene ND 0.10 1 01/23/17 11:36 01/30/17 20:06 218-01-9 ug/L Dibenz(a,h)anthracene ND ug/L 0.10 1 01/23/17 11:36 01/30/17 20:06 53-70-3 Fluoranthene ND 0.10 01/23/17 11:36 01/30/17 20:06 206-44-0 ug/L Fluorene ND ug/L 0.10 1 01/23/17 11:36 01/30/17 20:06 86-73-7 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 2-Methylnaphthalene ND ug/L 0.10 1 Naphthalene ND ug/L 0.10 1 Phenanthrene ND 0.10 1 01/23/17 11:36 01/30/17 20:06 85-01-8 ua/L Pyrene ND ug/L 0.10 1 Surrogates 2-Fluorobiphenyl (S) 109 % 25-150 1 Terphenyl-d14 (S) 110 %. 25-150 1 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 4.9 ug/L 4.0 1 01/19/17 16:44 67-64-1 C9Benzene ND ug/L 0.50 1 01/19/17 16:44 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/19/17 16:44 75-27-4 Bromoform ND ua/L 0.50 1 01/19/17 16:44 75-25-2 Bromomethane ND uo/L 0.50 1 01/19/17 16:44 74-83-9 2-Butanone (MEK) ND ug/L 2.0 1 01/19/17 16:44 78-93-3 Carbon disulfide ND ug/L 1.0 1 01/19/17 16:44 75-15-0 Carbon tetrachloride ND 0.50 ug/L 1 01/19/17 16:44 56-23-5 Chlorobenzene ND 01/19/17 16:44 108-90-7 ug/L 0.50 Chloroethane ND 0.50 01/19/17 16:44 75-00-3 ug/L Chloroform ND ug/L 0.50 01/19/17 16:44 67-66-3 Chloromethane ND 0.50 01/19/17 16:44 74-87-3 ug/L 1 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 01/19/17 16:44 96-12-8 Dibromochloromethane ND ug/L 0.50 01/19/17 16:44 124-48-1 1 1,2-Dibromoethane (EDB) ND ug/L 1.0 -01/19/17 16:44 106-93-4 1 Dichlorodifluoromethane ND ug/L 1.0 01/19/17 16:44 75-71-8 1 1,1-Dichloroethane ND ug/L 0.50 01/19/17 16:44 75-34-3 1,2-Dichloroethane ND ug/L 0.50 1 01/19/17 16:44 107-06-2 1.1-Dichloroethene ND ug/L 0.50 01/19/17 16:44 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/19/17 16:44 156-59-2 trans-1,2-Dichloroethene NΩ ug/L 0.50 1 01/19/17 16:44 156-60-5 1,2-Dichloropropane ND ug/L 0.50 1 01/19/17 16:44 78-87-5 cis-1,3-Dichloropropene ND ug/L 0.50 01/19/17 16:44 10061-01-5 1 trans-1,3-Dichloropropene ND 0.50 ug/L 1 01/19/17 16:44 10061-02-6 Ethylbenzene ND ug/L 0.50 1 01/19/17 16:44 100-41-4 2-Hexanone ND ug/L 1.0 1 01/19/17 16:44 591-78-6 isopropylbenzene (Cumene) ug/L ND 1.0 01/19/17 16:44 98-82-8 1 ug/L Methyl acetate ND 2.0 1 01/19/17 16:44 79-20-9 Methylene Chloride ND ug/L 0.50 01/19/17 16:44 75-09-2 1 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 01/19/17 16:44 108-10-1



ANALYTICAL RESULTS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

Date: 02/14/2017 09:05 AM

2048890

Sample: MW-63A	Lab ID: 204	8890010	Collected: 01/18/1	7 10:33	Received: 0	1/18/17 14:45 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Metl	nod: EPA 50	030B/8260					
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 16:44	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 16:44	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 16:44	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 16:44	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 16:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 16:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 16:44	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 16:44	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 16:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 16:44	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%.	72-126	1		01/19/17 16:44	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/19/17 16:44	460-00-4	
Toluene-d8 (S)	105	%.	79-119	1		01/19/17 16:44	2037-26-5	





Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

QC Batch:

72457

Analysis Method:

EPA 8015/8021

QC Batch Method:

EPA 8015/8021

Analysis Description:

8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples:

2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,

2048890009, 2048890010

METHOD BLANK: 303500

Matrix: Water

Associated Lab Samples:

Date: 02/14/2017 09:05 AM

2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,

2048890009, 2048890010

Blank Reporting Parameter Units Result Limit Qualifiers Analyzed Gasoline Range Organics ug/L ND 50.0 01/20/17 04:20 4-Bromofluorobenzene (S) %. 86 44-148 01/20/17 04:20

LABORATORY CONTROL SAMPLE: 303501 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Gasoline Range Organics ug/L 500 437 87 61-136 4-Bromofluorobenzene (S) 90 44-148 %.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303502 303503 MS MSD 2048890008 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Gasoline Range Organics ug/L ND 500 500 475 467 88 86 15-147 2 20 4-Bromofluorobenzene (S) %. 97 97 44-148



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

QC Batch:

72610

Analysis Method:

EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples:

METHOD BLANK: 304157

Matrix: Water

Associated Lab Samples:

2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Blank

Parameter

Parameter

Parameter

Date: 02/14/2017 09:05 AM

Units

Result

Reporting Limit

Qualifiers

Mercury

ug/L

ND

0.20 01/24/17 18:10

Analyzed

LABORATORY CONTROL SAMPLE:

LCS

LCS

% Rec

Mercury

Units ug/L

Conc.

Spike

Result 1.0 % Rec 103 Limits

80-120

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

304159

MSD

304160

MS

MSD

% Rec

Max

Qual

2048890008 Units Result

Spike Conc.

Spike Conc.

MS MSD Result Result 2.6

% Rec

% Rec

Limits

RPD RPD

Mercury

ug/L

1.9

MS

2.6

77

75-125 20 0



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

QC Batch:

72612

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples:

2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304161

Parameter

Parameter

Matrix: Water

Associated Lab Samples:

2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Blank

Reporting

Result

Limit

1.0

Analyzed

Qualifiers

Mercury, Dissolved

Units ug/L

ND

0.20 01/24/17 18:41

LABORATORY CONTROL SAMPLE: 304162

Spike

LCS

LCS

% Rec

Mercury, Dissolved

Mercury, Dissolved

Date: 02/14/2017 09:05 AM

Units ug/L

Conc.

Result

% Rec 103 Limits 80-120 Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

304163

MS

304164 MSD

MS

MSD

Max

Units

ug/L

2048890008 Spike Result

Spike Conc.

MS MSD Result

% Rec

% Rec Limits

RPD RPD

Qual

Parameter

Conc. ND

Result 1.1

1.1 91 % Rec 75-125

20



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

QC Batch:

72609

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3010

Analysis Description:

6020 MET

Associated Lab Samples:

2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304153

53 Matrix: Water

Associated Lab Samples:

Date: 02/14/2017 09:05 AM

2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/12/17 12:56	
Chromium	mg/L	ND	0.0010	02/12/17 12:56	
Lead	mg/L	ND	0.0010	02/12/17 12:56	
Vanadium	mg/L	ND	0.0050	02/12/17 12:56	

LABORATORY CONTROL SAMPLE:	304154					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	84-115	
Vanadium	mg/L	.02	0.016	82	81-115	

MATRIX SPIKE & MATRIX S	PIKE DUPLIC	CATE: 30415	5		304156							
Parameter 	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	.02	.02	0.016	0.020	80	101	80-120	23	20	R1
Chromium	mg/L	0.046	.02	.02	0.058	0.074	57	136	80-120	24	20	M1,R1
Lead	mg/L	ND	.02	.02	0.017	0.021	83	107	80-120	25	20	R1
Vanadium	mg/L	ND	.02	.02	0.0097	0.014	49	70	80-120	35	20	M1,R1



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

QC Batch:

72614

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3005A Analysis Description: 6020 MET Dissolved

Associated Lab Samples:

METHOD BLANK: 304165

Matrix: Water

Associated Lab Samples:

Date: 02/14/2017 09:05 AM

2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Chromium, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Lead, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Vanadium, Dissolved	ug/L	ND	5.0	02/12/17 13:20	

LABORATORY CONTROL SAMPLE:	304166	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.6	103	80-120	
hromium, Dissolved	ug/L	20	20.6	103	80-120	
ead, Dissolved	ug/L	20	20.2	101	80-120	
/anadium, Dissolved	ug/L	20	18.4	92	80-120	

MATRIX SPIKE & MATRIX SPIKE	DUPLIC	CATE: 30416	7 MS	MSD	304168							
Parameter	Units	2048890008 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	ND	20	20	19.5	19.5	96	97	75-125	0	20	
Chromium, Dissolved	ug/L	47.9	20	20	67.5	68.0	98	100	75-125	1	20	
Lead, Dissolved	ug/L	ND	20	20	20.3	20.6	102	103	75-125	2	20	
Vanadium, Dissolved	ug/L	ND	20	20	12.4	12.2	62	61	75-125	2	20	M1



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

QC Batch:

72436

Analysis Method:

EPA 5030B/8260

QC Batch Method:

EPA 5030B/8260

Associated Lab Samples:

Analysis Description: 8260 MSV Low Level 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,

2048890009, 2048890010

METHOD BLANK: 303413

Matrix: Water

Associated Lab Samples:

Date: 02/14/2017 09:05 AM

2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,

2048890009, 2048890010

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1-Dichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1-Dichloroethene	ug/L	ND	0.50	01/19/17 11:18	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/19/17 11:18	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/19/17 11:18	
1,2-Dichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,2-Dichloropropane	ug/L	ND	0.50	01/19/17 11:18	
2-Butanone (MEK)	ug/L	ND	2.0	01/19/17 11:18	
2-Hexanone	ug/L	ND	1.0	01/19/17 11:18	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/19/17 11:18	
Acetone	ug/L	ND	4.0	01/19/17 11:18	
Benzene	ug/L	ND	0.50	01/19/17 11:18	
Bromodichloromethane	ug/L	ND	0.50	01/19/17 11:18	
Bromoform	ug/L	ND	0.50	01/19/17 11:18	
Bromomethane	ug/L	ND	0.50	01/19/17 11:18	
Carbon disulfide	ug/L	· ND	1.0	01/19/17 11:18	
Carbon tetrachloride	ug/L	ND	0.50	01/19/17 11:18	
Chlorobenzene	ug/L	ND	0.50	01/19/17 11:18	
Chloroethane	ug/L	ND	0.50	01/19/17 11:18	
Chloroform	ug/L	ND	0.50	01/19/17 11:18	
Chloromethane	ug/L	ND	0.50	01/19/17 11:18	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/19/17 11:18	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/19/17 11:18	
Dibromochloromethane	ug/L	ND	0.50	01/19/17 11:18	
Dichlorodifluoromethane	ug/L	ND	1.0	01/19/17 11:18	
Ethylbenzene	ug/L	ND	0.50	01/19/17 11:18	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/19/17 11:18	
m&p-Xylene	ug/L	ND	2.0	01/19/17 11:18	
Methyl acetate	ug/L	ND	2.0	01/19/17 11:18	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/19/17 11:18	
Methylene Chloride	ug/L	ND	0.50	01/19/17 11:18	
o-Xylene	ug/L	ND	1.0	01/19/17 11:18	
Styrene	ug/L	ND	1.0	01/19/17 11:18	
Tetrachloroethene	ug/L	ND	0.50	01/19/17 11:18	
Toluene	ug/L	ND	0.50	01/19/17 11:18	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/19/17 11:18	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/19/17 11:18	
Trichloroethene	ug/L	ND	0.50	01/19/17 11:18	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

METHOD BLANK: 303413

Matrix: Water

Associated Lab Samples:

2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890009, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	01/19/17 11:18	
Vinyl chloride	ug/L	ND	0.50	01/19/17 11:18	
4-Bromofluorobenzene (S)	%.	99	68-124	01/19/17 11:18	
Dibromofluoromethane (S)	%.	98	72-126	01/19/17 11:18	
Toluene-d8 (S)	%.	107	79-119	01/19/17 11:18	

LABORATORY CONTROL SAMPLE:	303414					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	44.6	89	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	42.6	85	15-179	
1,1,2-Trichloroethane	ug/L	50	45.5	91	58-144	
1,1-Dichloroethane	ug/L	50	43.8	88	63-129	
1,1-Dichloroethene	ug/L	50	43.5	87	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	49.1	98	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.6	93	52-16 1	
1,2-Dichloroethane	ug/L	50	45.1	90	57-148	
1,2-Dichloropropane	ug/L	50	45.3	91	66-128	
2-Butanone (MEK)	ug/L	50	45.0	90	32-183	
2-Hexanone	ug/L	50	40.7	81	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.5	87	26-171	
Acetone	ug/L	50	44.1	88	22-165	
3enzene	ug/L	50	41.2	82	62-131	
3romodichloromethane	ug/L	50	46.9	94	69-132	
3romoform	ug/L	50	45.6	91	35-166	
3romomethane	ug/L	50	64.0	128	34-158	
Carbon disulfide	ug/L	50	50.4	10 1	31-128	
Carbon tetrachloride	ug/L	50	47.6	95	54-144	
Chlorobenzene	ug/L	50	50.8	102	70-127	
Chloroethane	ug/L	50	71.6	143	17-195	
Chloroform	ug/L	50	44.4	89	73-134	
Chloromethane	ug/L	50	37.4	75	17-153	
cis-1,2-Dichloroethene	ug/L	50	43.4	87	68-129	
cis-1,3-Dichloropropene	ug/L	50	46.8	94	72-138	
Dibromochloromethane	ug/L	50	46.0	92	49-146	
Dichlorodifluoromethane	ug/L	50	45.4	91	10-179	
Ethylbenzene	ug/L	50	46.5	93	66-126	
sopropylbenzene (Cumene)	ug/L	50	43.4	87	51-138	
m&p-Xylene	ug/L	100	92.3	92	65-129	
Methyl acetate	ug/L	50	45.7	91	20-142	
Methyl-terf-butyl ether	ug/L	50	46.9	94	37-166	
Methylene Chloride	ug/L	50	48.8	98	46-168	
o-Xylene	ug/L	50	44.4	89	65-124	

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REPORT OF LABORATORY ANALYSIS

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Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

Date: 02/14/2017 09:05 AM

2048890

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
rene	 ug/L	50	48.4	97	72-133	
rachloroethene	ug/L	50	47.9	96	46-157	
uene	ug/L	50	46.6	93	69-126	
ns-1,2-Dichloroethene	ug/L	50	43.4	87	60-129	
ns-1,3-Dichloropropene	ug/L	50	47.8	96	59-149	
hloroethene	ug/L	50	46.8	94	67-132	
hlorofluoromethane	ug/L	50	62.2	124	39-171	
yl chloride	ug/L	50	54.9	110	27-149	
romofluorobenzene (S)	%.			98	68-124	
romofluoromethane (S)	%.			98	72-126	
iene-d8 (S)	%.			104	79-119	

MATRIX SPIKE & MATRIX SPIKE	DUPLIC	CATE: 303415	5		303416							
			MS	MSD								
		2048890008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	49.5	49.0	99	98	54-137	1	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.5	43.2	85	86	15-187	2	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	46.0	45.2	92	90	59-148	2	20	
1,1-Dichloroethane	ug/L	ND	50	50	46.5	45.5	93	91	59-133	2	20	
1,1-Dichloroethene	ug/L	ND	50	50	46.3	45.1	93	90	44-146	3	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	47.8	48.3	96	97	23-166	1	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	47.5	46.8	95	94	55-166	2	20	
1,2-Dichloroethane	ug/L	ND	50	50	46.2	45.8	92	92	56-154	1	20	
1,2-Dichloropropane	ug/L	ND	50	50	47.6	46.7	95	93	62-135	2	20	
2-Butanone (MEK)	ug/L	ND	50	50	44.9	45.0	90	90	20-205	0	20	
2-Hexanone	ug/L	ND	50	50	40.4	39.7	81	79	25-189	2	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	41.6	41.1	83	82	23-184	1	20	
Acetone	ug/L	ND	50	50	48.3	47.2	93	91	11-217	2	20	
Benzene	ug/L	ND	50	50	44.5	43.4	. 89	87	52-141	2	20	
Bromodichloromethane	ug/L	ND	50	50	49.5	49.3	99	99	70-134	0	20	
Bramaform	ug/L	ND	50	50	46.4	46.0	93	92	37-171	1	20	
Bromomethane	ug/L	ND	50	50	69.3	66.5	139	133	34-155	4	20	
Carbon disulfide	ug/L	ND	50	50	58.3	54.5	117	109	28-130	7	20	
Carbon tetrachloride	ug/L	ND	50	50	52.3	51.3	105	103	48-146	2	20	
Chlorobenzene	ug/L	ND	50	50	53.8	53.2	108	106	67-129	1	20	
Chloroethane	ug/L	ND	50	50	80.3	77.0	161	154	12-192	4	20	
Chloroform	ug/L	ND	50	50	47.0	46.5	94	93	66-143	1	20	
Chloromethane	ug/L	ND	50	50	37.6	39.1	75	78	14-155	4	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	46.6	45.2	93	90	56-141	3	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	49.3	48.5	99	97	70-139	2	20	
Dibromochloromethane	ug/L	ND	50	50	47.1	46.8	94	94	50-150	1	20	
Dichlorodifluoromethane	ug/L	ND	50	50	46.2	45.3	92	91	10-173	2	20	
Ethylbenzene	ug/L	ND	50	50	50.4	49.2	101	98	57-135	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

Date: 02/14/2017 09:05 AM

2048890

MATRIX SPIKE & MATRIX SPIR	KE DUPLIC	CATE: 30341	5		303416							
			MS	MSD								
		2048890008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Isopropylbenzene (Cumene)	ug/L	ND	50	50	46.4	47.1	93	94	40-146	1	20	
m&p-Xylene	ug/L	ND	100	100	99.3	97.2	99	97	56-136	2	20	
Methyl acetate	ug/L	ND	50	50	44.2	45.2	88	90	10-142	2	20	
Methyl-tert-butyl ether	ug/L	4.7	50	50	51.6	51.5	94	94	35-176	0	20	
Methylene Chloride	ug/L	ND	50	50	50.8	49.1	102	98	45-166	3	20	
o-Xylene	ug/L	ND	50	50	47.0	46.7	94	93	57-133	1	20	
Styrene	ug/L	ND	50	50	16.7	14.4	33	29	58-144	15	20	M1
Tetrachloroethene	ug/L	ND	50	50	52.2	50.9	104	102	48-143	2	20	
Toluene	ug/L	ND	50	50	50.6	49.7	101	99	59-136	2	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	47.4	45.4	95	91	57-132	4	20	
trans-1,3-Dichloropropene	. ug/L	ND	50	50	49.4	48.1	99	96	59-154	3	20	
Trichloroethene	ug/L	0.81	50	50	52.6	50.8	104	100	58-140	3	20	
Trichlorofluoromethane	ug/L	ND	50	50	70.9	68.4	142	137	24-175	4	20	
Vinyl chloride	ug/L	ND	50	50	60.2	56.2	120	112	21-150	7	20	
4-Bromofluorobenzene (S)	%.						97	100	68-124			
Dibromofluoromethane (S)	%.						100	100	72-126			
Toluene-d8 (S)	%.						105	105	79-119			



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

QC Batch:

72438 EPA 3535 Analysis Method:

EPA 8015B Modified

QC Batch Method:

Analysis Description: EPA 8015 ORO

Associated Lab Samples:

2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 303428

Matrix: Water

Associated Lab Samples:

Date: 02/14/2017 09:05 AM

2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND ND	0.25	01/29/17 17:56	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/29/17 17:56	
n-Pentacosane (S)	%.	. 54	16-137	01/29/17 17:56	
o-Terphenyl (S)	%.	65	10-121	01/29/17 17:56	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L		.16J	39	10-115	
n-Pentacosane (S)	%.			47	16-137	
o-Terphenyl (S)	%.			61	10-121	

MATRIX SPIKE & MATRIX SPI		2048890008	MS Spike	MSD Spike	303431 MS	MSD	MS	MSD	% Rec	Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD RPD	Qual
Diesel Range Organic (C10- C28)	mg/L	ND	.8	.8	0.51	.43J	48	39	10-122	20	
n-Pentacosane (S)	%.						65	48	16-137		
o-Terphenyl (S)	%.						69	53	10-121		



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

QC Batch:

72547

EPA 3510

Analysis Method:

EPA 8270 by SIM

QC Batch Method: Associated Lab Samples:

Analysis Description: 8270 Water by SIM MSSV 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007

METHOD BLANK: 303977

Matrix: Water

Associated Lab Samples:

Date: 02/14/2017 09:05 AM

2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND ND	0.10	01/30/17 15:27	
Acenaphthene	ug/L	ND	0.10	01/30/17 15:27	
kcenaphthylene	ug/L	ND	0.10	01/30/17 15:27	
nthracene	ug/L	ND	0.10	01/30/17 15:27	
enzo(a)anthracene	ug/L	ND	0.10	01/30/17 15:27	
enzo(a)pyrene	ug/L	ND	0.10	01/30/17 15:27	
enzo(b)fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
enzo(g,h,i)perylene	ug/L	ND	0.10	01/30/17 15:27	
enzo(k)fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
hrysene	ug/L	ND	0.10	01/30/17 15:27	
ibenz(a,h)anthracene	ug/L	ND	0.10	01/30/17 15:27	
luoranthene	ug/L	ND	0.10	01/30/17 15:27	
luorene	ug/L	ND	0.10	01/30/17 15:27	
ndeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/30/17 15:27	
laphthalene	ug/L	ND	0.10	01/30/17 15:27	
Phenanthrene	ug/L	ND	0.10	01/30/17 15:27	
yrene	ug/L	ND	0.10	01/30/17 15:27	
-Fluorabiphenyl (S)	%.	108	25-150	01/30/17 15:27	
erphenyl-d14 (S)	%.	121	25-150	01/30/17 15:27	

LABORATORY CONTROL SAMPLE:	303978					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	4.6	116	35-150	
Acenaphthene	ug/L	4	4.1	101	35-150	
Acenaphthylene	ug/L	4	4.0	101	35-150	
Anthracene	ug/L	4	5.2	129	35-150	
Benzo(a)anthracene	ug/L	4	4.1	102	35-150	
Benzo(a)pyrene	ug/L	4	3.8	96	35-150	
Benzo(b)fluoranthene	ug/L	4	3.9	98	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.3	108	35-150	
Benzo(k)fluoranthene	ug/L	4	3.7	93	35-150	
Chrysene	ug/L	4	3.9	99	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.3	107	35-150	
Fluoranthene	ug/L	4	4.1	103	35-150	
Fluorene	ug/L	4	4.1	102	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.3	108	35-150	
Naphthalene	ug/L	4	3.9	98	35-150	
Phenanthrene	ug/L	4	4.2	105	35-150	
Pyrene	ug/L	4	4.0	101	35-150	

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Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

Date: 02/14/2017 09:05 AM

2048890

LABORATORY CONTROL SAMPLE:	303978					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			104	25-150	
Terphenyl-d14 (S)	%.			101	25-150	



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

QC Batch:

72592

Analysis Method:

EPA 8270 by SIM

QC Batch Method: EPA 3510

Analysis Description:

8270 Water by SIM MSSV

Associated Lab Samples:

2048890008, 2048890010

METHOD BLANK: 304106

Date: 02/14/2017 09:05 AM

Matrix: Water

Associated Lab Samples: 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers	
2-Methylnaphthalene	ug/L	ND	0.10	01/30/17 16:07		
Acenaphthene	ug/L	ND	0.10	01/30/17 16:07		
Acenaphthylene	ug/L	ND	0.10	01/30/17 16:07		
\nthracene	ug/L	ND	0.10	01/30/17 16:07		
Benzo(a)anthracene	ug/L	ND	0.10	01/30/17 16:07		
Benzo(a)pyrene	ug/L	ND	0.10	01/30/17 16:07		
enzo(b)fluoranthene	ug/L	ND	0.10	01/30/17 16:07		
lenzo(g,h,i)perylene	ug/L	ND	0.10	01/30/17 16:07		
Benzo(k)fluoranthene	ug/L	ND	0.10	01/30/17 16:07		
Chrysene	ug/L	ND	0.10	01/30/17 16:07		
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/30/17 16:07		
luoranthene	ug/L	ND	0.10	01/30/17 16:07		
luorene	ug/L	ND	0.10	01/30/17 16:07		
ndeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/30/17 16:07		
laphthalene	ug/L	ND	0.10	01/30/17 16:07		
Phenanthrene	ug/L	ND	0.10	01/30/17 16:07		
^o yrene	ug/L	ND	0.10	01/30/17 16:07		
?-Fluorobiphenyl (S)	%.	77	25-150	01/30/17 16:07		
erphenyl-d14 (S)	%.	81	25-150	01/30/17 16:07		

BORATORY CONTROL SAMPLE:	304107					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Methylnaphthalene	ug/L	4	3.6	90	35-150	
enaphthène	ug/L	4	3.3	82	35-150	
enaphthylene	ug/L	4	3.1	79	35-150	
thracene	ug/L	4	4.2	105	35-150	
nzo(a)anthracene	ug/L	4	3.3	84	35-150	
nzo(a)pyrene	ug/L	4	3.3	81	35-150	
zo(b)fluoranthene	ug/L	4	3.5	88	35-150	
zo(g,h,i)perylene	ug/L	4	3.3	82	35-150	
zo(k)fluoranthene	ug/L	4	3.5	87	35-150	
rsene	ug/L	4	3.4	86	35-150	
nz(a,h)anthracene	ug/L	4	3.3	83	35-150	
pranthene	ug/L	4	3.4	85	35-150	
oren e	ug/L	4	3.3	83	35-150	
eno(1,2,3-cd)pyrene	ug/L	4	3.3	83	35-150	
hthalene	ug/L	4	3.1	78	35-150	
nanthrene	ug/L	4	3.5	86	35-150	
ene	ug/L	4	3.4	86	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

LABORATORY CONTROL SAMPLE: 304107

LCS Spike

LCS

% Rec

Parameter

Date: 02/14/2017 09:05 AM

Conc.

Result

304109

% Rec 100 Limits Qualifiers

2-Fluorobiphenyl (S) Terphenyl-d14 (S)

%. %.

Units

103

25-150 25-150

MATRIX	SPIKE & MATRIX SPI	KE DUPLICATE	30410	8	
				MS	MS
		204	18890008	Spike	Spi
	Parameter	Unite	Popult	Conc	Col

Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylnaphthalene	ug/L	ND	4	4	5.2	5.0	131	125	35-150	4	20	
Acenaphthene	ug/L	ND	4	4	4.9	4.9	122	122	35-150	0	20	
Acenaphthylene	ug/L	ND	4	4	4.7	4.7	117	117	35-150	0	20	
Anthracene	ug/L	ND	4	4	6.5	6.8	162	171	35-150	5	20	M1
Benzo(a)anthracene	ug/L	ND	4	4	5.2	5.5	130	139	35-150	6	20	
Benzo(a)pyrene	ug/L	ND	4	4	5.0	5.3	124	132	35-150	6	20	
Benzo(b)fluoranthene	ug/L	ND	4	4	5.4	5.7	135	142	35-150	5	20	
Benzo(g,h,i)perylene	ug/L	ND	4	4	5.1	5.2	129	130	35-150	1	20	
Benzo(k)fluoranthene	ug/L	ND	4	4	5.2	5.7	129	142	35-150	9	20	
Chrysene	ug/L	ND	4	4	5.2	5.5	131	138	35-150	5	20	
Dibenz(a,h)anthracene	ug/L	ND	4	4	5.1	5.2	129	130	35-150	1	20	
Fluoranthene	ug/L	ND	4	4	5.3	5.6	132	140	35-150	6	20	
Fluorene	ug/L	ND	4	4	4.9	5.0	123	124	35-150	1	20	
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	5.1	5.2	128	130	35-150	2	20	
Naphthalene	ug/L	ND	4	4	4.6	4.3	114	106	35-150	7	20	
Phenanthrene	ug/L	ND	4	4	5.3	5.5	132	139	35-150	5	20	
Pyrene	ug/L	ND	4	4	5.2	5.7	129	141	35-150	9	20	
2-Fluorobiphenyl (S)	%.						124	119	25-150		20	
Terphenyl-d14 (S)	%.						127	137	25-150		20	



QUALIFIERS

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

2048890

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N

Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72701

[M5]

A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

Date: 02/14/2017 09:05 AM

C9 Common Laboratory Contaminant.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

Date: 02/14/2017 09:05 AM

2048890

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch	
2048890002	EB-011717	EPA 3535	72438	EPA 8015B Modified	72991	
048890003	MW-110AB	EPA 3535	72438	EPA 8015B Modified	72991	
048890004	MW-110B2	EPA 3535	72438	EPA 8015B Modified	72991	
048890005	MW-111A	EPA 3535	72438	EPA 8015B Modified	72991	
048890006	MW-114A	EPA 3535	72438	EPA 8015B Modified	72991	
048890007	DUP006	EPA 3535	72438	EPA 8015B Modified	72991	
048890008	MW-75B2	EPA 3535	72438	EPA 8015B Modified	72991	
048890010	MW-63A	EPA 3535	72438	EPA 8015B Modified	72991	
048890001	TB-011717	EPA 8015/8021	72457			
048890002	EB-011717	EPA 8015/8021	72457			
048890003	MW-110AB	EPA 8015/8021	72457			
048890004	MW-110B2	EPA 8015/8021	72457			
048890005	MW-111A	EPA 8015/8021	72457			
048890006	MW-114A	EPA 8015/8021	72457			
048890007	DUP006	EPA 8015/8021	72457			
048890008	MW-75B2	EPA 8015/8021	72457			
048890009	FB-011717	EPA 8015/8021	72457			
0 488900 10	MW-63A	EPA 8015/8021	72457			
048890002	EB-011717	EPA 3010	72609	EPA 6020	72692	
048890003	MW-110AB	EPA 3010	72609	EPA 6020	72692	
048890004	MW-110B2	EPA 3010	72609	EPA 6020	72692	
048890005	MW-111A	EPA 3010	72609	EPA 6020	72692	
048890006	MW-114A	EPA 3010	72609	EPA 6020	72692	
048890007	DUP006	EPA 3010	72609	EPA 6020	72692	
048890008	MW-75B2	EPA 3010	72609	EPA 6020	72692	
D 4 8890010	MW-63A	EPA 3010	72609	EPA 6020	72692	
048890002	EB-011717	EPA 3005A	72614	EPA 6020	72700	
048890003	MW-110AB	EPA 3005A	72614	EPA 6020	72700	
048890004	MW-110B2	EPA 3005A	72614	EPA 6020	72700	
048890005	MW-111A	EPA 3005A	72614	EPA 6020	72700	
048890006	MW-114A	EPA 3005A	72614	EPA 6020	72700	
048890007	DUP006	EPA 3005A	72614	EPA 6020	72700	
048890008	MW-75B2	EPA 3005A	72614	EPA 6020	72700	
048890010	MW-63A	EPA 3005A	72614	EPA 6020	72700	
048890002	EB-011717	EPA 7470	72610	EPA 7470	72698	
048890003	MW-110AB	EPA 7470	72610	EPA 7470	72698	
048890004	MW-110B2	EPA 7470	72610	EPA 7470	72698	
048890005	MW-111A	EPA 7470	72610	EPA 7470	72698	
048890006	MW-114A	EPA 7470	72610	EPA 7470	72698	
048890007	DUP006	EPA 7470	72610	EPA 7470	72698	
048890008	MW-75B2	EPA 7470	72610	EPA 7470	72698	
048890010	MW-63A	EPA 7470	72610	EPA 7470	72698	
048890002	EB-011717	EPA 7470	72612	EPA 7470	72699	
048890003	MW-110AB	EPA 7470	72612	EPA 7470	72699	
048890004	MW-110B2	EPA 7470	72612	EPA 7470	72699	
048890005	MW-111A	EPA 7470	72612	EPA 7470	72699	





QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL CW SAMPLING

Pace Project No.:

Date: 02/14/2017 09:05 AM

2048890

Lab ID	Sample ID QC Batch Mo		QC Batch	Analytical Method	Analytical Batch
2048890006	MW-114A	EPA 7470	72612	EPA 7470	72699
2048890007	DUP006	EPA 7470	72612	EPA 7470	72699
2048890008	MW-75B2	EPA 7470	72612	EPA 7470	72699
2048890010	MW-63A	EPA 7470	72612	EPA 7470	72699
2048890002	EB-011717	EPA 3510	72547	EPA 8270 by SIM	72701
2048890003	MW-110AB	EPA 3510	72547	EPA 8270 by SIM	72701
2048890004	MW-110B2	EPA 3510	72547	EPA 8270 by SIM	72701
2048890005	MW-111A	EPA 3510	72547	EPA 8270 by SIM	72701
2048890006	MW-114A	EPA 3510	72547	EPA 8270 by SIM	72701
2048890007	DUP006	EPA 3510	72547	EPA 8270 by SIM	72701
2048890008	MW-75B2	EPA 3510	72592	EPA 8270 by SIM	72702
2048890010	MW-63A	EPA 3510	72592	EPA 8270 by SIM	72702
2048890001	TB-011717	EPA 5030B/8260	72436		
2048890002	EB-011717	EPA 5030B/8260	72436		
2048890003	MW-110AB	EPA 5030B/8260	72436		
2048890004	MW-110B2	EPA 5030B/8260	72436		
2048890005	MW-111A	EPA 5030B/8260	72436		
2048890006	MW-114A	EPA 5030B/8260	72436		
2048890007	DUP006	EPA 5030B/8260	72436		
2048890008	MW-75B2	EPA 5030B/8260	72436		
2048890009	FB-011717	EPA 5030B/8260	72436		
2048890010	MW-63A	EPA 5030B/8260	72436		

Pace Analytical*

WO#: 2048890

Y / Analytical Request Document

F-ALL-Q-020rev.07, 15-May-2007

OCUMENT. All relevant fields must be completed accurately

Page: Sect Section A 2075273 Required Client Information: .ormation: Attention: Report To: Efraila Callera ArcabisСору Та: Company Name: Address: It is a place sure 401 8) REGULATORY AGENCY Address: NPDES DRINKING WATER GROUND WATER Purchase Order No.: RCRA OTHER mes. englasses conda Reference: \$\$\cappa - 277 - \cappa Site Location \mathcal{C} Requested Due Date/TAT: Project Number: STATE F002. KOS. R Requested Analysis Filtered (Y/N) Section D Matrix Codes valid codes to left) C=COMP) COLLECTED Preservatives Required Client Information MATRIX / CODE 04889C Drinking Water DW WT COMPOSITE COMPOSITE ww Residual Chlorine (Y/N) Waste Water (G=GRAB END/GRAB START Product Soil/Solid ŞL eas) # OF CONTAINERS OL SAMPLE ID **401** Wipe (A-Z, 0-9 / ,-) AR TS OT MATRIX CODE SAMPLE TYPE Sample IDs MUST BE UNIQUE Tissue Sol ITEM Pace Project No./ Lab I.D. DATE TIME TIME TB - Oill مهبهز LAR FR-CHAD 0946 0 × 0 0 MW-110AB 1049 17 -CAMI - WM 1138 10 10 (0) 1236 MW - 11 A MW - 1502 WT 0 Dupon MW-15B2 (M) 10 س 19 MW- 15BZ M50 1450 O 14A FR-BINN 11 1033 105 Ų MW-63A ACCEPTED BY / AFFILIATION TIME RELINQUISHED BY / AFFICIATION DATE TIME DATE SAMPLE CONDITIONS ADDITIONAL COMMENTS ارو ماده سا SAMPLER NAME AND SIGNATURE Received or Ice (Y/N) Custedy Sealed Cool (Y/N) **ORIGINAL** PRINT Name of SAMPLER: **DATE Signed** BAA. SIGNATURE of SAMPLER: C) (MM/DD/YY):

Courier:

☐ Pace Courier

Sample Condition Upon Receipt

WO#: 2048890

PM: JAR1

Due Date: 02/01/17

CLIENT: 98-ARCADISPR

Urb. Jardines de Guaynabo Calle Miginal Blg A-10 Guaynabo PR 00969

Project #: ☐ Hired Courier ☐ Fed X ☐ UPS □ DHL □ USPS ☐ Customer [see COC]

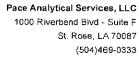
□ Other Custody Seal on Cooler/Box Present: Custody Seals intact: □Yes □No Therometer □ Therm Fisher IR 6 Blue None Type of Ice: Samples on ice: [see COC] Used: □ Therm Fisher IR 7 Date and Initials of person examining-Cooler Temperature: [see COC] contents: Temp should be above freezing to 6°C

remp must be measured from remperature blank when p	леѕелі	/		Comments:
Temperature Blank Present"?	□Yes〔	ŽV4	□n/a	1
Chain of Custody Present:	ZIYes [□No	□n/a	2
Chain of Custody Complete:	1 <u>0</u> 79€ [□No	□N/A	3
Chain of Custody Relinquished:		□No	□N/A	4
Sampler Name & Signature on COC:	ا کو∀⊡	□No	□n/a	5
Samples Arrived within Hold Time:		□No	□n/a	6
Sufficient Volume:	'□Y9s [□No	□N/A	7
Correct Containers Used:	∐Yes l	□No	□N/A	8
Filtered vol. Rec. for Diss. tests	□Yes	□Ng	□N/A	9
Sample Labels match COC:	, ⊈Yes [□w	□N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	ZYes [□No	□n⁄a	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	□Yes [ĎN/A	
All containers preservation checked found to be in compliance with EPA recommendation.	□Yes {		ĎN/A	If No. was prosperative added? —Vec. —Ne.
Headspace in VOA Vials (>6mm):	□Yes [JN₀	ØN/A	14
Trip Blank Present:	□Yes ∫	≱ √6		15
· ····				

Client Notification/ Resolution: Person Contacted: Date/Time: Comments/ Resolution:

Sample Condition Upon Receipt

Face Analytical 1000 Riverband, Blvd., St. Rose, LA 70087	uite F	Project #:	20
Courier: Pace Courier Hired Courier	Fed X 🗆 UF	S DHL	☐ USPS ☐ Customer ☐ Other
Custody Seal on Cooler/Box Present: [see	COC]		Custody Seals intact: ☐Yes ☐No
Therometer	Type of Ice:	/et Blue None	Samples on ice: [see COC]
Cooler Temperature: [see COC] Tea	mp should be above fr	eezing to 6°C	Date and Initials of person examining contents:
Temp must be measured from Temperature blank when	present	Comments:	
Temperature Blank Present"?	□Yes □No ZIN/A	1	
Chain of Custody Present:	.⊒Yes □No □N/A	2	
Chain of Custody Complete:	Yes ONC ON/A	3	
Chain of Custody Relinquished:	√Yes □No □N/A	4	
Sampler Name & Signature on COC:	ØYes □No □N/A	5	
Samples Arrived within Hold Time:	Yes DNo DN/A	6	
Sufficient Volume:	ZYes □No □N/A		
Correct Containers Used:	√Yes □No □N/A	·····	
Filtered vol. Rec. for Diss. tests	□Yes □No ØN/A		
Sample Labels match COC:	EYes DNo DN/A		
All containers received within manafacture's precautionary and/or expiration dates.	ZYes □No □N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).		12	
All containers preservation checked found to be in compliance with EPA recommendation.	Yes No N/A	If No, was pre 13 If added reco	eserative added? □Yes □No rd lot no.: HNO3 H2SO4
Headspace in VOA Vials (>6mm):	□Yes ZNo □N/A	14	
Trip Blank Present:	ZYes □No	15	
Client Notification/ Resolution:			
Person Contacted:			Date/Time:
Comments/ Resolution:			
			
			·





February 22, 2017

Efrain Calderon BBL Caribe Engineering P.S.C. 48 City View Plaza1, Suite 401 Road 16, Km. 1.2 Guaynabo, PR 00968

RE: Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 19, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Yeireliz Torres for Juan Redondo juan.redondo@pacelabs.com

Project Manager

Enclosures

cc: Sharon Colon Abner Hernandez Marianela Mercado-Burgos







CERTIFICATIONS

00119

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch: 11277CA

Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC): E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006

Pennsylviania Dept. of Env Protection (NELAC): 68-04202 Texas Commission on Env. Quality (NELAC): T104704405-09-TX U.S. Dept. of Agriculture Foreign Soil Import: P330-10-

Commonwealth of Virginia (TNI): 480246



SAMPLE SUMMARY

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048968001	TB-011817	Water	01/18/17 00:00	01/19/17 15:39
2048968002	EB-011817	Water	01/18/17 09:22	01/19/17 15:39
2048968003	MW-38A	Water	01/18/17 11:16	01/19/17 15:39
2048968004	MW-84B2	Water	01/18/17 12:31	01/19/17 15:39
2048968005	MW-84A	Water	01/18/17 13:23	01/19/17 15:39
2048968006	MW-17B	Water	01/18/17 15:34	01/19/17 15:39
2048968007	FB-011817	Water	01/18/17 15:42	01/19/17 15:39
2048968008	TB-011917	Water	01/19/17 00:00	01/19/17 15:39
2048968009	EB-011917	Water	01/19/17 10:00	01/19/17 15:39
2048968010	MW-77B	Water	01/19/17 11:17	01/19/17 15:39
2048968011	MW-20B	Water	01/19/17 12:25	01/19/17 15:39
2048968012	MW-78B	Water	01/19/17 13:15	01/19/17 15:39
2048968013	MW-21B	Water	01/19/17 13:56	01/19/17 15:39
2048968014	DUP007	Water	01/19/17 00:00	01/19/17 15:39
2048968015	FB-011917	Water	01/19/17 14:02	01/19/17 15:39



SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048968001	TB-011817	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968002	EB-011817	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	мнм	2	PASI-N
	EPA 6020	KJR	4	PASI-N	
	EPA 6020	KJR	4	PASI-N	
	EPA 7470	MHB1	1	PASI-N	
	EPA 7470	MHB1	1	PASI-N	
	EPA 8270 by SIM	GEJ	19	PASI-N	
		EPA 5030B/8260	JRP	45	PASI-N
2048968003 MW-38A	EPA 8015B Modified	SLF	4	PASI-N	
		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
	EPA 7470	MHB1	1	PASI-N	
	EPA 7470	MHB1	1	PASI-N	
	EPA 8270 by SIM	GEJ	19	PASI-N	
		EPA 5030B/8260	JRP	45	PASI-N
2048968004 MW-84B2	MW-84B2	EPA 8015B Modified	SLF	4	PASI-N
	EPA 8015/8021	МНМ	2	PASI-N	
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PAS!-N
		EPA 8270 by SIM	GEJ	19	PASI-N
	_	EPA 5030B/8260	JRP	45	PASI-N
2048968005 MW-84A	MW-84A	EPA 8015B Modified	SLF	4	PASI-N
	•	EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
	•	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968006 MW-17B	MW-17B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	мнм	2	PASI-N
	•	EPA 6020	KJR	4	PASI-N



SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968007	FB-011817	EPA 8015/8021	мнм	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968008	TB-011917	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968009	EB-011917	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	МНМ	2	PASI-N
	EPA 6020	KJR	4	PASI-N	
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968010	MW-77B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JŘP	45	PASI-N
2048968011	MW-20B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	мнм	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968012	MW-78B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N



SAMPLE ANALYTE COUNT

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968013	MW-21B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968014	DUP007	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968015	FB-011917	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Method:

EPA 8015B Modified

Client:

Description: 8015M DRO/ORO Organics BBL Caribe / Arcadis PR

Date:

February 22, 2017

General Information:

11 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H2: Extraction or preparation conducted outside EPA method holding time

MW-17B (Lab ID: 2048968006)

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: 72656

S2: Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample reanalysis).

- MW-17B (Lab ID: 2048968006)
 - n-Pentacosane (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72656

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 73658

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:





Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Method:EPA 8015B ModifiedDescription:8015M DRO/ORO OrganicsClient:BBL Caribe / Arcadis PRDate:February 22, 2017

Batch Comments:

• QC Batch: 72656

Analyte Comments:

QC Batch: 72656

1b: Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Reanalysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

• MW-17B (Lab ID: 2048968006)

• n-Pentacosane (S)

QC Batch: 73658

1b: Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Reanalysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

• MW-17B (Lab ID: 2048968006)

· n-Pentacosane (S)

(504)469-0333



PROJECT NARRATIVE

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Method:

EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client:

BBL Caribe / Arcadis PR

Date:

February 22, 2017

General Information:

15 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Method:

EPA 6020

Description: 6020 MET ICPMS

Client:

BBL Caribe / Arcadis PR

Date:

February 22, 2017

General Information:

11 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72609

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304155)
 - Chromium
 - Vanadium
- MSD (Lab ID: 304156)
 - Chromium
 - Vanadium

R1: RPD value was outside control limits.

- MSD (Lab ID: 304156)
 - Arsenic
 - Chromium
 - Lead
 - Vanadium





Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Method:

EPA 6020

Description: 6020 MET ICPMS

Client:

BBL Caribe / Arcadis PR

Date:

February 22, 2017



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Method:

EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client:

BBL Caribe / Arcadis PR

Date:

February 22, 2017

General Information:

11 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72614

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304167)
 - · Vanadium, Dissolved
- MSD (Lab ID: 304168)
 - · Vanadium, Dissolved



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Method:

EPA 7470 Description: 7470 Mercury

Client:

BBL Caribe / Arcadis PR

Date:

February 22, 2017

General Information:

11 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Method:

EPA 7470

Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR

Date:

February 22, 2017

General Information:

11 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Method:

EPA 8270 by SIM

Client:

Description: 8270 MSSV PAH by SIM SEP BBL Caribe / Arcadis PR

Date:

February 22, 2017

General Information:

11 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72748

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

(504)469-0333



PROJECT NARRATIVE

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No .:

2048968

Method:

EPA 5030B/8260

Client:

Description: 8260 MSV Low Level BBL Caribe / Arcadis PR

Date:

February 22, 2017

General Information:

15 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 72642

C9: Common Laboratory Contaminant.

- MW-17B (Lab ID: 2048968006)
 - Acetone
- MW-84A (Lab ID: 2048968005)
 - Acetone
- TB-011817 (Lab ID: 2048968001)
 - Acetone
- TB-011917 (Lab ID: 2048968008)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

LADO

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

o-Xylene

Date: 02/22/2017 06:26 AM

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Sample: TB-011817 Lab ID: 2048968001 Collected: 01/18/17 00:00 atrix: Water Parameters Results CAS No. Units Report Limit Prepared Qual nalvzed 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 01/25/17 20:46 1 Surrogates 4-Bromofluorobenzene (S) 103 %. 44-148 1 01/25/17 20:46 460-00-4 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 18.5 ug/L 4.0 01/20/17 14:46 67-64-1 1 C9 Benzene ND ug/L 0.50 01/20/17 14:46 71-43-2 1 Bromodichloromethane 0.50 ug/L 01/20/17 14:46 75-27-4 0.50 Bromoform ND ug/L 0.50 01/20/17 14:46 75-25-2 Bromomethane ND ug/L 0.50 01/20/17 14:46 74-83-9 2-Butarione (MEK) ND ug/L 2.0 01/20/17 14:46 78-93-3 1 Carbon disulfide ND ug/L 1.0 1 01/20/17 14:46 75-15-0 Carbon tetrachloride NΩ ug/L 0.50 1 01/20/17 14:46 56-23-5 Chlorobenzene ND ug/L 0.50 1 01/20/17 14:46 108-90-7 Chloroethane NΩ ug/L 0.50 1 01/20/17 14:46 75-00-3 Chloroform 2.4 ug/L 0.50 1 01/20/17 14:46 67-66-3 Chloromethane NΩ 01/20/17 14:46 74-87-3 ug/L 0.50 1 1,2-Dibromo-3-chloropropane ND ug/L 0.20 01/20/17 14:46 96-12-8 1 Dibromochloromethane ND 0.50 ug/L 1 01/20/17 14:46 124-48-1 1,2-Dibromoethane (EDB) ND 01/20/17 14:46 106-93-4 ug/L 1.0 1 Dichlorodifluoromethane ND 1.0 ug/L 01/20/17 14:46 75-71-8 1 1,1-Dichloroethane ND ug/L 0.50 01/20/17 14:46 75-34-3 1 1,2-Dichloroethane ND 0.50 01/20/17 14:46 107-06-2 ug/L 1 1,1-Dichloroethene ND 0.50 01/20/17 14:46 75-35-4 ug/L 1 cis-1,2-Dichloroethene ND ug/L 1.0 01/20/17 14:46 156-59-2 1 trans-1,2-Dichloroethene ND ug/L 0.50 01/20/17 14:46 156-60-5 1 1,2-Dichloropropane ND ug/L 0.50 01/20/17 14:46 78-87-5 1 cis-1,3-Dichloropropene ND ug/L 0.50 1 01/20/17 14:46 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 1 01/20/17 14:46 10061-02-6 Ethylbenzene ND 0.50 ug/L 1 01/20/17 14:46 100-41-4 2-Hexanone ND 1.0 01/20/17 14:46 591-78-6 ug/L 1 Isopropylbenzene (Cumene) ND ug/L 1.0 1 01/20/17 14:46 98-82-8 Methyl acetate ND ug/L 2.0 01/20/17 14:46 79-20-9 1 Methylene Chloride ND ug/L 0.50 1 01/20/17 14:46 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 01/20/17 14:46 108-10-1 Methyl-tert-butyl ether ND ug/L 0.50 1 01/20/17 14:46 1634-04-4 Styrene ND ug/L 1.0 1 01/20/17 14:46 100-42-5 1,1,2,2-Tetrachloroethane ND 0.50 ug/L 1 01/20/17 14:46 79-34-5 Tetrachloroethene ND 0.50 01/20/17 14:46 127-18-4 ug/L 1 Toluene ND 0.50 ug/L 01/20/17 14:46 108-88-3 1 1,1,1-Trichloroethane ND ug/L 0.50 1 01/20/17 14:46 71-55-6 1,1,2-Trichloroethane ND 01/20/17 14:46 79-00-5 ug/L 0.50 1 Trichloroethene ND ug/L 0.50 01/20/17 14:46 79-01-6 1 01/20/17 14:46 75-69-4 Trichlorofluoromethane ND ug/L 0.50 1 Vinyl chloride ND ug/L 0.50 01/20/17 14:46 75-01-4 1 m&p-Xylene ND ug/L 2.0 1 01/20/17 14:46 179601-23-1

REPORT OF LABORATORY ANALYSIS

1.0

ND

ua/L

01/20/17 14:46 95-47-6

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



Date: 02/22/2017 06:26 AM

ANALYTICAL RESULTS

Project:	PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968					ISI	Megin	/S/	
Sample: TB-011817	Lab ID: 204	8968001	Collected: 01/18/1	7 00:00		1/19/17 15:35	(a)(f)XCVoter	
Parameters	Results	Units	Report Limit	DF	Prepared		(S No.	Qual
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260		`	CO LICE		
Surrogates		24						
Dibromofluoromethane (S)	93	%.	72-126	1		01/20/17 14:46		
4-Bromofluorobenzene (S) Toluene-d8 (S)	99 106	%. %.	68-124 79-119	1 1		01/20/17 14:46		
Toluene-uo (3)	100	70.	79-119	ı		01/20/17 14:46	2037-20-5	
Sample: EB-011817	Lab ID: 204	8968002	Collected: 01/18/1	7 09:22	Received: 01	1/19/17 15:39 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 80	015B Modified Prepa	ration M	lethod: EPA 3538	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 11:58		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 11:58		
Surrogates								
n-Pentacosane (S)	51	%.	16-137	1		02/02/17 11:58		
o-Terphenyl (S)	57	%.	10-121	1	01/24/17 12:12	02/02/17 11:58	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/25/17 21:13		
4-Bromofluorobenzene (S)	100	%.	44-148	1		01/25/17 21:13	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 60	020 Preparation Met	nod: EP	A 3010			
Arsenic	ND	mg/L	0.0010	-1	01/24/17 08:30	02/12/17 16:32	7440-38-2	
Chromium	. ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:32	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 60	020 Preparation Met	nod: EP	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:37	7440-62-2	
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	A 747 0			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:01	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 74	470 Preparation Met	h od : EP	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:12	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparat	ion Metl	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1		01/31/17 13:54		
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	50-32-8	

OCIADO

St. Rose, LA 70087

(504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.

Methylene Chloride

4-Methyl-2-pentanone (MIBK)

Date: 02/22/2017 06:26 AM

2048968

Sample: EB-011817 Lab ID: 2048968002 Collected: 01/18/17 09:22 Received: Parameters Results Units Report Limit Prepared Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Benzo(b)fluoranthene ND ug/L 0.10 01/25/17 09:39 01/31/17 13:54 205-99-2 Benzo(q,h,i)perylene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 13:54 191-24-2 Benzo(k)fluoranthene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 13:54 207-08-9 Chrysene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 13:54 218-01-9 Dibenz(a,h)anthracene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 13:54 53-70-3 Fluoranthene ND 01/25/17 09:39 01/31/17 13:54 206-44-0 ug/L 0.10 1 Fluorene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 13:54 86-73-7 Indeno(1,2,3-cd)pyrene ND 0.10 01/25/17 09:39 01/31/17 13:54 193-39-5 ug/L 1 2-Methylnaphthalene ND 0.10 01/25/17 09:39 01/31/17 13:54 91-57-6 ug/L 1 Naphthalene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 13:54 91-20-3 Phenanthrene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 13:54 85-01-8 Pyrene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 13:54 129-00-0 Surrogates 2-Fluorobiphenyl (S) 78 %. 25-150 1 01/25/17 09:39 01/31/17 13:54 321-60-8 Terphenyl-d14 (S) 78 25-150 %. 1 01/25/17 09:39 01/31/17 13:54 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone ND 01/20/17 15:04 67-64-1 ug/L 4.0 1 Benzene ND 0.50 ug/L 01/20/17 15:04 71-43-2 1 Bromodichloromethane ND 0.50 ug/L 01/20/17 15:04 75-27-4 1 Bromoform ND 0.50 01/20/17 15:04 75-25-2 ug/L 1 Bromomethane ND 01/20/17 15:04 74-83-9 ug/L 0.50 1 2-Butanone (MEK) ND 2.0 01/20/17 15:04 78-93-3 ug/L 1 Carbon disulfide ND 01/20/17 15:04 75-15-0 ug/L 1.0 Carbon tetrachloride ND 0.50 01/20/17 15:04 56-23-5 ug/L Chlorobenzene ND ug/L 0.50 1 01/20/17 15:04 108-90-7 Chloroethane ND ug/L 0.50 01/20/17 15:04 75-00-3 Chloroform NΩ ug/L 0.50 01/20/17 15:04 67-66-3 Chloromethane ND ug/L 0.50 01/20/17 15:04 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 01/20/17 15:04 96-12-8 Dibromochloromethane ND ug/L 0.50 01/20/17 15:04 124-48-1 1,2-Dibromoethane (EDB) ND 01/20/17 15:04 106-93-4 ug/L 1.0 Dichlorodifluoromethane ND 01/20/17 15:04 75-71-8 ug/L 1.0 1,1-Dichloroethane ND ug/L 0.50 01/20/17 15:04 75-34-3 1,2-Dichloroethane ND ug/L 0.50 01/20/17 15:04 107-06-2 1,1-Dichloroethene ND ug/L 0.50 01/20/17 15:04 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 01/20/17 15:04 156-59-2 trans-1,2-Dichloroethene ND ug/L 0.50 01/20/17 15:04 156-60-5 1,2-Dichloropropane NΩ ug/L 0.50 01/20/17 15:04 78-87-5 cis-1,3-Dichloropropene NΠ ug/L 0.50 01/20/17 15:04 10061-01-5 trans-1,3-Dichloropropene NΩ 01/20/17 15:04 10061-02-6 ug/L 0.50 1 Ethylbenzene NΩ ug/L 0.50 01/20/17 15:04 100-41-4 1 2-Hexanone ND 01/20/17 15:04 591-78-6 ug/L 1.0 1 Isopropylbenzene (Cumene) ND 1.0 01/20/17 15:04 98-82-8 ug/L 1 Methyl acetate ND 2.0 ug/L 1 01/20/17 15:04 79-20-9

REPORT OF LABORATORY ANALYSIS

0.50

1.0

1

ND

ND

ug/L

ug/L

01/20/17 15:04 75-09-2

01/20/17 15:04 108-10-1

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (50,4)469-0333



ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Vanadium, Dissolved

Date: 02/22/2017 06:26 AM

Sample: EB-011817 Collected: 01/18/17 09:22 Lab ID: 2048968002 Receiv Parameters Prepare Results Units Report Limit DF Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Methyl-tert-butyl ether ND uq/L 0.50 01/20/17 15:04 1634-04-4 1 Styrene ND ug/L 1.0 1 01/20/17 15:04 100-42-5 1,1,2,2-Tetrachloroethane 0.50 ND ug/L 1 01/20/17 15:04 79-34-5 Tetrachloroethene ND ug/L 0.50 1 01/20/17 15:04 127-18-4 Toluene ND ug/L 0.50 1 01/20/17 15:04 108-88-3 1,1,1-Trichloroethane NΠ ug/L 0.50 01/20/17 15:04 71-55-6 1,1,2-Trichloroethane NΩ ug/L 0.50 01/20/17 15:04 79-00-5 NΩ Trichloroethene ug/L 0.50 01/20/17 15:04 79-01-6 Trichlorofluoromethane NΩ 01/20/17 15:04 75-69-4 0.50 ug/L 1 Vinyl chloride ND 0.50 01/20/17 15:04 75-01-4 ug/L 1 m&p-Xylene ND ug/L 01/20/17 15:04 179601-23-1 2.0 1 o-Xylene ND 01/20/17 15:04 95-47-6 ug/L 1.0 1 Surrogates Dibromofluoromethane (S) QA% 72-126 01/20/17 15:04 1868-53-7 1 4-Bromofluorobenzene (S) 99 % 68-124 1 01/20/17 15:04 460-00-4 Toluene-d8 (S) 106 % 01/20/17 15:04 2037-26-5 79-119 1 Sample: MW-38A Lab ID: 2048968003 Collected: 01/18/17 11:16 Received: 01/19/17 15:39 Matrix: Water **Parameters** Results DE CAS No. Units Report Limit Prepared Analyzed Qual 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 01/24/17 12:12 02/02/17 12:26 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 01/24/17 12:12 02/02/17 12:26 Surrogates n-Pentacosane (S) 39 % 16-137 1 01/24/17 12:12 02/02/17 12:26 629-99-2 o-Terphenyl (S) 10-121 01/24/17 12:12 02/02/17 12:26 84-15-1 44 % 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 ND Gasoline Range Organics 50.0 01/25/17 21:40 ug/L 1 Surrogates 4-Bromofluorobenzene (S) 101 %. 44-148 01/25/17 21:40 460-00-4 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 0.0010 Arsenic NΠ 01/24/17 08:30 02/12/17 16:44 7440-38-2 mg/L 1 Chromium ND mg/L 0.0010 01/24/17 08:30 02/12/17 16:44 7440-47-3 1 Lead 0.0014 mg/L 0.0010 1 01/24/17 08:30 02/12/17 16:44 7439-92-1 Vanadium 0.0070 mg/L 0.0050 1 01/24/17 08:30 02/12/17 16:44 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved ND ug/L 1.0 01/24/17 09:53 02/12/17 19:41 7440-38-2 Chromium, Dissolved ND ug/L 1.0 01/24/17 09:53 02/12/17 19:41 7440-47-3 Lead, Dissolved ND ug/L 1.0 01/24/17 09:53 02/12/17 19:41 7439-92-1

REPORT OF LABORATORY ANALYSIS

5.0

ND

ug/L

01/24/17 09:53 02/12/17 19:41 7440-62-2



ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Sample: MW-38A

Date: 02/22/2017 06:26 AM

Lab ID: 2048968003

Collected: 01/18/17 11:16

Qual

Sample: www-36A	Lab ID: 204	8968003	Collected: U1/18/1	17 11.18	s Received: UT	/19/ 455/46 N	atrix version
Parameters	Results	Units	Report Limit	DF	Prepare PA 7470	AGA	CNS No.
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Met	hod: EF	PA 7470	CO TICEN	
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:03	7439-97-6
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 74	470 Preparation Met	hod: EF	PA 7470		
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:15	7439-97-6
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparat	ion Met	thod: EPA 3510		
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	208-96-8
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	207-08-9
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	206-44-0
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1		01/31/17 14:14	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	91-20-3
Phenanthrene	ND	ug/L	0.10	1		01/31/17 14:14	
Pvrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	129-00-0
Surrogates		v					
2-Fluorobiphenyl (S)	78	%.	25-150	1	01/25/17 09:39	01/31/17 14:14	321-60-8
Terphenyl-d14 (S)	78	%.	25-150	1	01/25/17 09:39	01/31/17 14:14	1718-51-0
8260 MSV Low Level	Analytical Metl	nod: EPA 5	030B/8 26 0				
Acetone	ND	ug/L	4.0	1		01/20/17 15:23	67-64-1
Benzene	ND	ug/L	0.50	1		01/20/17 15:23	71-43-2
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 15:23	75-27-4
Bromoform	ND	ug/L	0.50	1		01/20/17 15:23	75-25-2
Bromomethane	ND	ug/L	0.50	1		01/20/17 15:23	74-83-9
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 15:23	78-93-3
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 15:23	75-15-0
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 15:23	56-23-5
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 15:23	108-90-7
Chloroethane	ND	ug/L	0.50	1		01/20/17 15:23	
Chloroform	0.62	ug/L	0.50	1		01/20/17 15:23	
Chloromethane	ND	ug/L	0.50	1		01/20/17 15:23	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 15:23	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 15:23	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 15:23	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 15:23	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:23	
i, i-Dichloroculanc							

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:	
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PUMA TERMINAL GW SAMPLING

Date: 02/22/2017 06:26 AM

2048968

Pace Project No.: 2048968					Relative 01/1#9178 Mary Sater
Sample: MW-38A	Lab ID: 204	8968003	Collected: 01/18/1	7 11:16	Reserved: 01/1945) Matrix Mater
Parameters	Results	Units	Report Limit	DF	Prend S No. Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50)30B/8260		O HERON
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 15:23 75-35-4
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/20/17 15:23 156-59-2
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/20/17 15:23 156-60-5
1,2-Dichloropropane	ND	ug/L	0.50	1	01/20/17 15:23 78-87-5
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 15:23 10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 15:23 10061-02-6
Ethylbenzene	ND	ug/L	0.50	1	01/20/17 15:23 100-41-4
2-Hexanone	ND	ug/L	1.0	1	01/20/17 15:23 591-78-6
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 15:23 98-82-8
Methyl acetate	ND	ug/L	2.0	1	01/20/17 15:23 79-20-9
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 15:23 75-09-2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 15:23 108-10-1
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/20/17 15:23 1634-04-4
Styrene	ND	ug/L	1.0	1	01/20/17 15:23 100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 15:23 79-34-5
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 15:23 127-18-4
Toluene	ND	ug/L	0.50	1	01/20/17 15:23 108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 15:23 71-55-6
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 15:23 79:00-5
Trichloroethene	ND	ug/∟	0.50	1	01/20/17 15:23 79-01-6
Trichlorofluoromethane	ND	ug/L ug/L	0.50	1	01/20/17 15:23 75-69-4
Vinyl chloride	ND	ug/∟ ug/L	0.50	1	01/20/17 15:23 75-09-4
m&p-Xylene	ND	ug/L ug/L	2.0	1	
o-Xylene		-			01/20/17 15:23 179601-23-1
Surrogates	ND	ug/L	1.0	1	01/20/17 15:23 95-47-6
Dibromofluoromethane (S)	95	%.	72-126	1	01/20/17 15:23 1868-53-7
4-Bromofluorobenzene (S)	100	%.	68-124	1	01/20/17 15:23 1606-35-7
Toluene-d8 (S)	106	%.	79-119	1	01/20/17 15:23 2037-26-5
Sample: MW-84B2	Lab ID: 204	8968004	Collected: 01/18/1	17 12:31	1 Received: 01/19/17 15:39 Matrix: Water
Parameters	Results	Units	Report Limit	DF	Prepared Analyzed CAS No. Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	ration N	Method: EPA 3535
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12 02/02/17 12:55
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12 02/02/17 12:55
Surrogates	.,,,	9, -	1.0	•	SHEW COLOR OF CLICK
n-Pentacosane (S)	68	%.	16-137	1	01/24/17 12:12 02/02/17 12:55 629-99-2
o-Terphenyl (S)	62	%.	10-121	1	01/24/17 12:12 02/02/17 12:55 84-15-1
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021		
Gasoline Range Organics	ND	ug/L	50.0	1	01/25/17 22:07
Surrogates 4-Bromofluorobenzene (S)	101	%.	44-148	1	01/25/17 22:07 460-00-4
4-Diomolidorobenzene (3)	101	70.	44-148	1	U1/20/17 22.U7 40U-UU-4

(504)469-0333



ANALYTICAL RESULTS

Project:

8260 MSV Low Level

Bromodichloromethane

Acetone

Benzene

Bromoform

Bromomethane

2-Butanone (MEK)

PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-84B2 Lab ID: 2048968004 Collected: 01/18/17 12:31 Parameters Results Units Report Limit DE Qual 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 0.0026 Arsenic mg/L 0.0010 01/24/17 08:30 02/12/17 16:48 7440-38-2 Chromium ND mg/L 0.0010 01/24/17 08:30 02/12/17 16:48 7440-47-3 Lead ND mg/L 0.0010 01/24/17 08:30 02/12/17 16:48 7439-92-1 Vanadium ND mg/L 0.00501 01/24/17 08:30 02/12/17 16:48 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved 1.3 ug/L 1.0 01/24/17 09:53 02/12/17 19:53 7440-38-2 Chromium, Dissolved ND ug/L 1.0 01/24/17 09:53 02/12/17 19:53 7440-47-3 1 Lead, Dissolved ND ug/L 1.0 01/24/17 09:53 02/12/17 19:53 7439-92-1 1 Vanadium, Dissolved ND ug/L 5.0 01/24/17 09:53 02/12/17 19:53 7440-62-2 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury ND ug/L 0.20 01/24/17 08:59 01/24/17 17:10 7439-97-6 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury, Dissolved ND ug/L 0.20 01/24/17 09:49 01/24/17 19:17 7439-97-6 Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 8270 MSSV PAH by SIM SEP Acenaphthene ND 0.10 ug/L 1 01/25/17 09:39 01/31/17 14:34 83-32-9 Acenaphthylene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 208-96-8 Anthracene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 120-12-7 Benzo(a)anthracene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 56-55-3 Benzo(a)pyrene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 50-32-8 Benzo(b)fluoranthene ND 0.10 01/25/17 09:39 01/31/17 14:34 205-99-2 ug/L 1 ug/L Benzo(g,h,i)perylene ND 0.10 1 01/25/17 09:39 01/31/17 14:34 191-24-2 Benzo(k)fluoranthene ND ug/L 0.101 01/25/17 09:39 01/31/17 14:34 207-08-9 Chrysene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 218-01-9 Dibenz(a,h)anthracene ND 0.10 01/25/17 09:39 01/31/17 14:34 53-70-3 ug/L 1 Fluoranthene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 206-44-0 ND Fluorene ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 86-73-7 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 91-57-6 Naphthalene ND ug/L 0.101 01/25/17 09:39 01/31/17 14:34 91-20-3 Phenanthrene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 85-01-8 Pyrene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 14:34 129-00-0 Surrogates 2-Fluorobiphenyl (S) 70 %. 25-150 1 01/25/17 09:39 01/31/17 14:34 321-60-8 Terphenyl-d14 (S) 01/25/17 09:39 01/31/17 14:34 1718-51-0 71 %. 25-150 1

REPORT OF LABORATORY ANALYSIS

4.0

0.50

0.50

0.50

0.50

2.0

1

1

1

1

1

1

Analytical Method: EPA 5030B/8260

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ND

ND

ND

NΩ

ΝП

ND

01/20/17 15:41 67-64-1

01/20/17 15:41 71-43-2

01/20/17 15:41 75-27-4

01/20/17 15:41 74-83-9

01/20/17 15:41 78-93-3

75-25-2

01/20/17 15:41



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ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

Toluene-d8 (S)

Date: 02/22/2017 06:26 AM

2048968

Sample: MW-84B2 Lab ID: 2048968004 Collected: 01/18/17 12:31 Receive Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Carbon disulfide ND ug/L 1.0 01/20/17 15:41 75-15-0 1 Carbon tetrachloride ND ug/L 0.50 1 01/20/17 15:41 56-23-5 Chlorobenzene ND ug/L 0.50 1 01/20/17 15:41 108-90-7 Chloroethane ND ug/L 0.50 1 01/20/17 15:41 75-00-3 Chloroform ND ug/L 0.50 1 01/20/17 15:41 67-66-3 Chloromethane ND ug/L 0.50 1 01/20/17 15:41 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 01/20/17 15:41 96-12-8 Dibromochloromethane ND ug/L 0.50 01/20/17 15:41 124-48-1 1,2-Dibromoethane (EDB) ug/L ND 1.0 1 01/20/17 15:41 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 01/20/17 15:41 75-71-8 01/20/17 15:41 75-34-3 1.1-Dichloroethane ND ug/L 0.50 1 1.2-Dichloroethane ND ug/L 0.50 1 01/20/17 15:41 107-06-2 1,1-Dichloroethene ND ug/L 0.50 01/20/17 15:41 75-35-4 1 cis-1,2-Dichloroethene ND ug/L 01/20/17 15:41 156-59-2 10 1 trans-1,2-Dichloroethene ND ug/L 0.50 01/20/17 15:41 156-60-5 1 1,2-Dichloropropane ND 0.50 01/20/17 15:41 78-87-5 ug/L 1 cis-1,3-Dichloropropene ND ug/L 0.50 01/20/17 15:41 10061-01-5 1 trans-1,3-Dichloropropene ug/L ND 0.50 1 01/20/17 15:41 10061-02-6 Ethylbenzene ND ug/L 0.50 01/20/17 15:41 100-41-4 2-Hexanone ND ug/L 1.0 01/20/17 15:41 591-78-6 Isopropylbenzene (Cumene) ND 01/20/17 15:41 98-82-8 ug/L 1.0 Methyl acetate ND 01/20/17 15:41 79-20-9 ug/L 2.0 Methylene Chloride ND 0.50 01/20/17 15:41 75-09-2 ug/L 4-Methyl-2-pentanone (MIBK) ND 01/20/17 15:41 108-10-1 ug/L 1.0 Methyl-tert-butyl ether ND ug/L 0.50 01/20/17 15:41 1634-04-4 Styrene ND ug/L 1.0 01/20/17 15:41 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 01/20/17 15:41 79-34-5 Tetrachloroethene ND ug/L 0.50 01/20/17 15:41 127-18-4 Toluene ND ug/L 0.501 01/20/17 15:41 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 1 01/20/17 15:41 71-55-6 1,1,2-Trichloroethane 01/20/17 15:41 79-00-5 ND ug/L 0.50 1 Trichloroethene 01/20/17 15:41 79-01-6 ND 0.50 ug/L 1 Trichlorofluoromethane ND 0.50 01/20/17 15:41 75-69-4 ug/L 1 Vinyl chloride ND 0.50 01/20/17 15:41 75-01-4 ug/L 1 m&p-Xylene ND ug/L 2.0 1 01/20/17 15:41 179601-23-1 o-Xylene ND 01/20/17 15:41 95-47-6 1 ug/L 1.0 Surrogates Dibromofluoromethane (S) 96 %. 72-126 1 01/20/17 15:41 1868-53-7 4-Bromofluorobenzene (S) 98 %. 68-124 1 01/20/17 15:41 460-00-4

79-119

1

105

%

01/20/17 15:41 2037-26-5

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

Date: 02/22/2017 06:26 AM

2048968

Sample: MW-84A Lab ID: 2048968005 Collected: 01/18/17 13:23 Vater Parameters DF Results Units Report Limit AS No Qual 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 35 Diesel Range Organic (C10-C28) ND mq/L 0.50 1 01/24/17 12:12 02/02/17 13:23 Oil Range Organics (>C28-C40) ND mg/L 1.0 1 01/24/17 12:12 02/02/17 13:23 Surrogates 16-137 n-Pentacosane (S) 37 % 1 01/24/17 12:12 02/02/17 13:23 629-99-2 o-Terphenyl (S) 38 %. 10-121 1 01/24/17 12:12 02/02/17 13:23 84-15-1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 01/25/17 23:30 Surrogates 4-Bromofluorobenzene (S) 102 %. 44-148 01/25/17 23:30 460-00-4 6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010 Arsenic 0.012 0.0010 mg/L 1 01/24/17 08:30 02/12/17 16:52 7440-38-2 Chromium ND 0.0010 mg/L 01/24/17 08:30 02/12/17 16:52 7440-47-3 1 Lead ND mg/L 0.0010 01/24/17 08:30 02/12/17 16:52 7439-92-1 1 Vanadium ND 0.0050 mg/L 1 01/24/17 08:30 02/12/17 16:52 7440-62-2 6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A Arsenic, Dissolved 10.7 ug/L 1.0 01/24/17 09:53 02/12/17 19:57 7440-38-2 Chromium, Dissolved ND ug/L 1.0 1 01/24/17 09:53 02/12/17 19:57 7440-47-3 Lead, Dissolved ND ug/L 1.0 01/24/17 09:53 02/12/17 19:57 7439-92-1 1 Vanadium, Dissolved ND ug/L 5.0 01/24/17 09:53 02/12/17 19:57 7440-62-2 1 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury ND ца/Г 0.20 01/24/17 08:59 01/24/17 17:12 7439-97-6 7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury, Dissolved ND ug/L 0.20 01/24/17 09:49 01/24/17 19:24 7439-97-6 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Acenaphthene ND ug/L 0.10 01/25/17 09:39 01/31/17 15:13 83-32-9 1 ug/L Acenaphthylene ND 0.10 01/25/17 09:39 01/31/17 15:13 208-96-8 1 Anthracene ND 0.10 ug/L 01/25/17 09:39 01/31/17 15:13 120-12-7 1 Benzo(a)anthracene ND ug/L 0.10 01/25/17 09:39 01/31/17 15:13 56-55-3 1 Benzo(a)pyrene ND 0.10 01/25/17 09:39 01/31/17 15:13 50-32-8 ua/L 1 Benzo(b)fluoranthene ND 0.10 01/25/17 09:39 01/31/17 15:13 205-99-2 ug/L 1 Benzo(g,h,i)perylene ND ug/L 0.10 01/25/17 09:39 01/31/17 15:13 191-24-2 1 Benzo(k)fluoranthene ND ug/L 0.10 01/25/17 09:39 01/31/17 15:13 207-08-9 Chrysene ND 01/25/17 09:39 01/31/17 15:13 218-01-9 ug/L 0.10 Dibenz(a,h)anthracene ND 0.10 01/25/17 09:39 01/31/17 15:13 53-70-3 ug/L Fluoranthene ND ug/L 0.10 01/25/17 09:39 01/31/17 15:13 206-44-0 Fluorene ND ug/L 0.10 01/25/17 09:39 01/31/17 15:13 86-73-7 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 15:13 193-39-5 2-Methylnaphthalene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 15:13 91-57-6 Naphthalene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 15:13 91-20-3 Phenanthrene ND ug/L 0.10 01/25/17 09:39 01/31/17 15:13 85-01-8

OCIADO

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ANALYTICAL RESULTS

Project:

m&p-Xylene

Date: 02/22/2017 06:26 AM

PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968 Sample: MW-84A Lab ID: 2048968005 Collected: 01/18/17 13:23 Parameters Results Units DF CAS No. Report Limit Qual Analytical Method: EPA 8270 by SIM Preparation Method: EPA 35 8270 MSSV PAH by SIM SEP ND Pyrene ug/L 0.10 1 01/25/17 09:39 01/31/17 15:13 129-00-0 Surrogates 2-Fluorobiphenyl (S) 82 % 25-150 1 Terphenyl-d14 (S) 87 %. 25-150 1 01/25/17 09:39 01/31/17 15:13 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone 50.9 ug/L 4.0 01/20/17 15:59 67-64-1 C9 1 Benzene ND ug/L 0.50 01/20/17 15:59 71-43-2 1 Bromodichloromethane ND ug/L 0.50 01/20/17 15:59 75-27-4 1 Bromoform ND ug/L 0.50 01/20/17 15:59 75-25-2 1 01/20/17 15:59 74-83-9 Bromomethane ND 0.50 ug/L 1 2-Butanone (MEK) ND ug/L 2.0 01/20/17 15:59 78-93-3 1 Carbon disulfide ND ug/L 1.0 01/20/17 15:59 75-15-0 1 Carbon tetrachloride ND ug/L 0.50 1 01/20/17 15:59 56-23-5 Chlorobenzene ND ug/L 0.50 1 01/20/17 15:59 108-90-7 Chloroethane ND ug/L 0.50 1 01/20/17 15:59 75-00-3 Chloroform ND ug/L 0.50 1 01/20/17 15:59 67-66-3 Chloromethane ND ug/L 0.50 01/20/17 15:59 74-87-3 1,2-Dibromo-3-chloropropane ND 0.20 01/20/17 15:59 96-12-8 ug/L Dibromochloromethane ND ug/L 0.50 1 01/20/17 15:59 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 01/20/17 15:59 106-93-4 1 Dichlorodifluoromethane ND ug/L 1.0 1 01/20/17 15:59 75-71-8 1,1-Dichloroethane ND ug/L 0.50 1 01/20/17 15:59 75-34-3 1,2-Dichloroethane ND ug/L 0.50 1 01/20/17 15:59 107-06-2 1.1-Dichloroethene ND ug/L 0.50 1 01/20/17 15:59 75-35-4 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/20/17 15:59 156-59-2 trans-1,2-Dichloroethene 0.62 0.50 ug/L 1 01/20/17 15:59 156-60-5 ND 01/20/17 15:59 78-87-5 1.2-Dichloropropane ug/L 0.50 1 cis-1,3-Dichloropropene ND ug/L 0.50 1 01/20/17 15:59 10061-01-5 trans-1,3-Dichloropropene ND 0.50 ug/L 1 01/20/17 15:59 10061-02-6 Ethylbenzene ND 0.50 ug/L 1 01/20/17 15:59 100-41-4 2-Hexanone ND ug/L 1.0 01/20/17 15:59 591-78-6 1 isopropylbenzene (Cumene) ND ug/L 1.0 01/20/17 15:59 98-82-8 1 Methyl acetate ND 2.0 01/20/17 15:59 79-20-9 ug/L 1 Methylene Chloride ND 0.50 01/20/17 15:59 75-09-2 ug/L 1 4-Methyl-2-pentanone (MIBK) ND 1.0 01/20/17 15:59 108-10-1 ug/L 1 Methyl-tert-butyl ether ug/L 3.3 0.50 1 01/20/17 15:59 1634-04-4 Styrene ND ug/L 1.0 1 01/20/17 15:59 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 1 01/20/17 15:59 79-34-5 Tetrachloroethene ND ug/L 0.50 1 01/20/17 15:59 127-18-4 Toluene ND 0.50 01/20/17 15:59 ug/L 1 108-88-3 1,1,1-Trichloroethane ND 0.50 01/20/17 15:59 71-55-6 ug/L 1 1,1,2-Trichloroethane ND ug/L 0.50 1 01/20/17 15:59 79-00-5 Trichloroethene ND ug/L 0.50 01/20/17 15:59 79-01-6 Trichlorofluoromethane ND ug/L 0.50 01/20/17 15:59 75-69-4 1 Vinyl chloride ND ug/L 0.50 1 01/20/17 15:59 75-01-4

REPORT OF LABORATORY ANALYSIS

2.0

ND

ug/L

01/20/17 15:59 179601-23-1

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(504)469-0333



Date: 02/22/2017 06:26 AM

ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Sample: MW-84A	Lab ID:	2048968005	Collected: 01/18	3/17 13:23	Received	N19/17 N/39/	di Water	
Parameters	Results	Units	Report Limit		Prepared	Will on Met N	CAS No.	Qual
					, repared	A STATE OF THE STA	0/10/110.	
8260 MSV Low Level	Analytical	Method: EPA 5	030B/8260					
o-Xylene	NE) ug/L	1.1) 1		01/20/17 15:59	9 95-47-6	
Surrogates Dibromofluoromethane (S)	9	5 %.	. 72-12	3 1		01/20/17 15:59	1969 52 7	
4-Bromofluorobenzene (S)	99		68-12-			01/20/17 15:59		
Toluene-d8 (S)	105		79-11			01/20/17 15:5		
Sample: MW-17B	Lab ID:	2048968006	Collected: 01/18	3/17 15:34	Received: 01	1/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical	Method: EPA 8	015B Modified Pre	paration M	lethod: EPA 353	5		
Diesel Range Organic (C10-C28)	NE	D mg/L	0.5) 1	01/24/17 12:12	02/02/17 13:5	1	
Diesel Range Organic (C10-C28)	NE) mg/L	0.5) 1	02/06/17 08:47	02/06/17 13:1:	3	H2
Oil Range Organics (>C28-C40)	NE	D mg/L	1.	1	01/24/17 12:12	02/02/17 13:5	1	
Oil Range Organics (>C28-C40) Surrogates	NE	D mg/L	1.) 1	02/06/17 08:47	02/06/17 13:1:	3	H2
n-Pentacosane (S)	1	1 %.	16-13	7 1	01/24/17 12:12	02/02/17 13:5	1 629-99-2	1b,S2
n-Pentacosane (S)	2	1 %.	16-13	7 1	02/06/17 08:47	02/06/17 13:1:	3 629-99-2	1b
o-Terphenyl (S)	36	ŝ %.	10-12	1 1	02/06/17 08:47	02/06/17 13:1:	3 84-15-1	
o-Terphenyl (S)	32	2 %.	10-12	1 1	01/24/17 12:12	02/02/17 13:5	1 84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical	Method: EPA 8	015/8021					
Gasoline Range Organics Surrogates	NE	O ug/L	50.) 1		01/25/17 23:5	7	
4-Bromofluorobenzene (S)	102	2 %.	44-14	3 1		01/25/17 23:5	7 460-00-4	
6020 MET ICPMS	Analytical	Method: EPA 6	020 Preparation M	ethod: EP/	A 3010			
Arsenic	NE	D mg/L	0.001) 1	01/24/17 08:30	02/12/17 16:5	6 7440-38-2	
Chromium	0.093	3 mg/∟	0.001) 1	01/24/17 08:30	02/12/17 16:5	6 7440-47-3	
Lead	0.010	0 mg/L	0.001) 1	01/24/17 08:30	02/12/17 16:5	6 7439-92-1	
Vanadium	0.24	4 mg/L	0.005) 1	01/24/17 08:30	02/12/17 16:5	6 7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical	Method: EPA 6	020 Preparation M	ethod: EP/	A 3005A			
Arsenic, Dissolved	NE		1.) 1		02/12/17 20:0		
Chromium, Dissolved	1.3	3 ug/L	1.) 1	01/24/17 09:53	02/12/17 20:0	1 7440-47-3	
Lead, Dissolved	NE		1.) 1	01/24/17 09:53	02/12/17 20:0	1 7439-92-1	
Vanadium, Dissolved	44.0	0 ug/L	5.	0 1	01/24/17 09:53	02/12/17 20:0	1 7440-62-2	
7470 Mercury	Analytical	Method: EPA 7	470 Preparation M	ethod: EP	A 7470			
Mercury	0.45	5 ug/L	0.2	0 1	01/24/17 08:59	01/24/17 17:1	4 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical	Method: EPA 7	470 Preparation M	ethod: EP	A 7470			
Mercury, Dissolved	NE	O ug/L	0.2	0 1	01/24/17 09:49	01/24/17 19:2	6 7439-97-6	

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

Date: 02/22/2017 06:26 AM

2048968

Pace Project No.: 2048968					[4]	W 1/4	1/3	
Sample: MW-17B	Lab ID: 204	8968006	Collected: 01/18/	17 15:34	Received		Valer	
Parameters	Results	Units	Report Limit	DF	Prepared	WCO THEN	AS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Prepara	tion Metr	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/31/17 15:33		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/31/17 15:33		
Fluoranthene	ND	ug/L	0.10	1		01/31/17 15:33		
Fluorene	ND	ug/L	0.10	1		01/31/17 15:33		
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/31/17 15:33		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/31/17 15:33		
Naphthalene	ND	ug/L	0.10	1		01/31/17 15:33		
Phenanthrene	ND	ug/L	0.10	1		01/31/17 15:33		
Pyrene	ND	ug/L	0.10	1		01/31/17 15:33		
Surrogates	113	ug/ L	0.10		01/20/17 00:00	01/01/17 10:00	123 00 0	
2-Fluorobiphenyl (S)	59	%.	25-150	1	01/25/17 09:39	01/31/17 15:33	321-60-8	
Terphenyl-d14 (S)	62	%.	25-150	1		01/31/17 15:33		
8260 MSV Low Level	Analytical Met	hod: EPA 5	030B/8260					
Acetone	6.3	ug/L	4.0	1		01/20/17 16:17	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/20/17 16:17		00
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 16:17		
Bromoform	ND	ug/∟ ug/∟	0.50	1		01/20/17 16:17		
Bromomethane	ND	ug/∟ ug/L	0.50	1		01/20/17 16:17		
2-Butanone (MEK)	ND	ug/∟ ug/L	2.0	1		01/20/17 16:17		
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 16:17		
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 16:17		
Chlorobenzene	ND	ug/L ug/L	0.50	1		01/20/17 16:17		
Chloroethane	ND	ug/L	0.50	1		01/20/17 16:17		
Chloroform	ND	ug/L	0.50	1		01/20/17 16:17		
Chloromethane	ND	ug/L	0.50	1		01/20/17 16:17		
1,2-Dibromo-3-chloropropane	ND ND	_	0.20	1				
Dibromochloromethane	ND ND	ug/L	0.50	1		01/20/17 16:17		
1,2-Dibromoethane (EDB)	ND ND	ug/L	1.0			01/20/17 16:17		
Dichlorodifluoromethane		ug/L		1		01/20/17 16:17		
1,1-Dichloroethane	ND ND	ug/L	1.0	1		01/20/17 16:17		
•	ND ND	ug/L	0.50			01/20/17 16:17		
1,2-Dichloroethane	ND ND	ug/L	0.50	1		01/20/17 16:17		
1,1-Dichloroethene	ND ND	ug/L	0.50	1		01/20/17 16:17		
cis-1,2-Dichloroethene trans-1,2-Dichloroethene	ND ND	ug/L	1.0	1		01/20/17 16:17		
*	ND ND	ug/L	0.50	1		01/20/17 16:17		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:17		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:17		
trans-1,3-Dichloropropene	ND ND	ug/L	0.50	1		01/20/17 16:17		
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:17	100-41-4	



ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No .:

Date: 02/22/2017 06:26 AM

2048968

Sample: MW-17B Lab ID: 2048968006 Collected: 01/18/17 15:34 Rece Prep Parameters Results Units Report Limit DF Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 2-Hexanone ND ug/L 1.0 1 591-78-6 Isopropyibenzene (Cumene) ND ug/L 1.0 1 01/20/17 16:17 98-82-8 Methyl acetate ND ug/L 2.0 01/20/17 16:17 79-20-9 1 Methylene Chloride ND ug/L 0.50 01/20/17 16:17 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 01/20/17 16:17 108-10-1 Methyl-tert-butyl ether ND ug/L 0.50 01/20/17 16:17 1634-04-4 Styrene ND ug/L 1.0 01/20/17 16:17 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 01/20/17 16:17 79-34-5 Tetrachloroethene ND ug/L 0.50 1 01/20/17 16:17 127-18-4 Toluene ND ug/L 0.50 1 01/20/17 16:17 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 1 01/20/17 16:17 71-55-6 1,1,2-Trichloroethane ND ug/L 0.50 1 01/20/17 16:17 79-00-5 Trichloroethene ND ug/L 0.50 1 01/20/17 16:17 79-01-6 Trichlorofluoromethane ND ug/L 0.50 01/20/17 16:17 75-69-4 1 Vinyl chloride ND ug/L 0.50 1 01/20/17 16:17 75-01-4 m&p-Xylene ND ug/L 2.0 1 01/20/17 16:17 179601-23-1 o-Xylene ND ug/L 01/20/17 16:17 95-47-6 1.0 1 Surrogates Dibromofluoromethane (S) %. 94 72-126 1 01/20/17 16:17 1868-53-7 4-Bromofluorobenzene (S) 98 %. 68-124 1 01/20/17 16:17 460-00-4 Toluene-d8 (S) 104 %. 79-119 1 01/20/17 16:17 2037-26-5

Sample: FB-011817	Lab ID: 2048	8968007	Collected: 01/18/1	7 15:42	Received: 0	1/19/17 15:39	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 80	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/26/17 00:24	1	
4-Bromofluorobenzene (S)	100	%.	44-148	1		01/26/17 00:24	460-00-4	
8260 MSV Low Level	Analytical Meth	od: EPA 50	030B/8260					
Acetone	ND	ug/L	4.0	1		01/20/17 16:3	5 67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 16:35	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 16:35	5 75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 16:38	5 75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 16:38	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 16:38	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 16:38	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 16:38	5 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 16:38	5 108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 16:38	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 16:38		
Chloromethane	ND	ug/L	0.50	1		01/20/17 16:38		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 16:38	5 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 16:38	5 124-48-1	



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ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

4-Bromofluorobenzene (S)

8260 MSV Low Level

Bromodichloromethane

Date: 02/22/2017 06:26 AM

Acetone

Benzene

2048968

Sample: FB-011817	Lab ID: 204	8968007	Collected: 01/18/1	7 15:42	Received.	COTTLEEN	arix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 16:35	106-93-4	
Dichlorodifluoromethane	ND	цg/L	1.0	1		01/20/17 16:35	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 16:35		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:35		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:35		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:35		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:35		
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:35		
2-Hexanone	ND	ug/L	1.0	1		01/20/17 16:35		
Isopropylbenzene (Cumene)	ND	ug/L ug/L	1.0	1		01/20/17 16:35		
Methyl acetate	ND	ug/L ug/L	2.0	1		01/20/17 16:35		
Methylene Chloride	ND	-	0.50	1		01/20/17 16:35		
4-Methyl-2-pentanone (MIBK)	ND ND	ug/L	1.0					
•		ug/L		1		01/20/17 16:35		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 16:35		
Styrene	ND	ug/L	1.0	1		01/20/17 16:35		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 16:35		
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 16:35		
Toluene	ND	ug/L	0.50	1		01/20/17 16:35		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:35		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:35		
Trichloroethene	ND	ug/L	0.50	1		01/20/17 16:35		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 16:35	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 16:35	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 16:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 16:35	95-47-6	
Surrogates								
Dibromofluoromethane (S)	97	%.	72-126	1		01/20/17 16:35	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/20/17 16:35	460-00-4	
Toluene-d8 (S)	104	%.	79-119	1		01/20/17 16:35	2037-26-5	
Sample: TB-011917	Lab ID: 204	8968008	Collected: 01/19/1	7 00:00	Received: 0	1/19/17 15:39 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Meth	nod: EPA 8	015/8021		<u></u>	<u> </u>		
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 00:51		
Surrogates	400	0/	44.440			04/00/47 00 54		,

REPORT OF LABORATORY ANALYSIS

44-148

4.0

0.50

0.50

103

15.8

ND

0.57

Analytical Method: EPA 5030B/8260

ug/L

ug/L

ug/L

C9

01/26/17 00:51 460-00-4

01/20/17 16:53 67-64-1

01/20/17 16:53 71-43-2

01/20/17 16:53 75-27-4

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Sample: TB-011917	Lab ID: 2048968008		Collected: 01/19/17 00:00		Receiled 01/19/44 Poccar Main Waler
Parameters	Results	Units	Report Limit	DF	Prepare Averyzed No. Qual
8260 MSV Low Level	Analytical Met	nod: EPA 5	030B/8260		CO CHEMIC
Bromoform	ND	ug/L	0.50	1	01/20/17 16:53 75-25-2
Bromomethane	ND	ug/L	0.50	1	01/20/17 16:53 74-83-9
2-Butanone (MEK)	ND	ug/L	2.0	1	01/20/17 16:53 78-93-3
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 16:53 75-15-0
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 16:53 56-23-5
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 16:53 108-90-7
Chloroethane	ND	ug/L	0.50	1	01/20/17 16:53 75-00-3
Chloroform	2.5	ug/L	0.50	1	01/20/17 16:53 67-66-3
Chloromethane	ND	ug/L	0.50	1	01/20/17 16:53 74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 16:53 96-12-8
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 16:53 124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 16:53 106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/20/17 16:53 75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1	01/20/17 16:53 75-34-3
1,2-Dichloroethane	ND	ug/L	0.50	1	01/20/17 16:53 107-06-2
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 16:53 75-35-4
cis-1,2-Dichloroethene	ND	ug/L ug/L	1.0	1	01/20/17 16:53 156-59-2
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/20/17 10:53 156-60-5
1,2-Dichloropropane	ND	ug/L ug/L	0.50	1	01/20/17 16:53 136-60-5
cis-1,3-Dichloropropene	ND	ug/L ug/L	0.50	1	01/20/17 16:53 10061-01-5
trans-1,3-Dichloropropene	ND.	ug/L ug/L	0.50	1	01/20/17 16:53 10061-01-5
Ethylbenzene	ND ND	ug/L ug/L	0.50	1	01/20/17 16:53 10061-02-6
2-Hexanone	ND	ug/L ug/L	1.0	1	
Isopropylbenzene (Cumene)	ND		1.0	1	01/20/17 16:53 591-78-6
Methyl acetate	ND	ug/L	2.0	1	01/20/17 16:53 98-82-8
•		ug/L			01/20/17 16:53 79-20-9
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 16:53 75-09-2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 16:53 108-10-1
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/20/17 16:53 1634-04-4
Styrene	ND	ug/L	1.0	1	01/20/17 16:53 100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 16:53 79-34-5
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 16:53 127-18-4
Toluene	ND	ug/L	0.50	1	01/20/17 16:53 108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 16:53 71-55-6
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 16:53 79-00-5
Trichloroethene	ND	ug/L	0.50	1	01/20/17 16:53 79-01-6
Trichlorofluoromethane	ND ·	ug/L	0.50	1	01/20/17 16:53 75-69-4
Vinyl chloride	ND	ug/L	0.50	1	01/20/17 16:53 75-01-4
m&p-Xylene	ND	ug/L	2.0	1	01/20/17 16:53 179601-23-1
o-Xylene	ND	ug/L	1.0	1	01/20/17 16:53 95-47-6
Surrogates				_	
Dibromofluoromethane (S)	95	%.	72-126	1	01/20/17 16:53 1868-53-7
4-Bromofluorobenzene (S)	99	%.	68-124	1	01/20/17 16:53 460-00-4
Toluene-d8 (S)	105	%.	79-119	1	01/20/17 16:53 2037-26-5

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

lect:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

Date: 02/22/2017 06:26 AM

2048968

Sample: EB-011917	Lab ID: 2048	3968009	Collected: 01/19/1	7 10:00		9/17 58 1	rit ater	
Parameters	Results	Units	Report Limit	DF	Prepared	MCOall CEN	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Meth	od: EPA 80	115B Modified Prepa	ration M	lethod: EPA 3535			
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 14:19		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 14:19		
Surrogates								
n-Pentacosane (S)	27	%.	16-137	1	01/24/17 12:12	02/02/17 14:19	629-99-2	
o-Terphenyl (S)	38	%.	10-121	1	01/24/17 12:12	02/02/17 14:19	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Meth	od: EPA 80	015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 01:18		
Surrogates		ū						
4-Bromofluorobenzene (S)	102	%.	44-148	1		01/26/17 01:18	460-00-4	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EP/	A 3010			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7440-38-2	
Chromium	ND	mg/L	0.0010	1		02/12/17 17:00		
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7439-92-1	
√anadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:00	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	nod: EPA 60	020 Preparation Met	nod: EP/	4 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:05	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1		02/12/17 20:05		
Lead, Dissolved	ND	ug/L	1.0	1		02/12/17 20:05		
Vanadium, Dissolved	ND	ug/L	5.0	1		02/12/17 20:05		
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Met	nod: EP/	A 7470			
Mercury	ND	ug/L	0.20	1		01/24/17 17:16	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EP/	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:28	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 82	270 by SIM Preparat	ion Meth	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1		01/31/17 15:53		
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/31/17 15:53		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/31/17 15:53		
Chrysene	ND	ug/L	0.10	1		01/31/17 15:53		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/31/17 15:53		
Fluoranthene	ND	ug/L	0.10	1		01/31/17 15:53		
Fluorene	ND	ug/L	0.10	1		01/31/17 15:53		
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/31/17 15:53		
2-Methylnaphthalene	ND ND		0.10	1		01/31/17 15:53		
Naphthalene	ND ND	ug/L ug/l						
Phenanthrene		ug/L	0.10	1		01/31/17 15:53		
rnenallillene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	8-110-ca	

1000 Riverbend Blvd - Suite F St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

Vinyl chloride

m&p-Xylene

Date: 02/22/2017 06:26 AM

PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968 Sample: EB-011917 Lab ID: 2048968009 Collected: 01/19/17 10:00 Water Prepare Parameters Results Units CAS No. Report Limit Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Pyrene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 15:53 129-00-0 Surrogates 2-Fluorobiphenyl (S) 81 %. 25-150 1 01/25/17 09:39 01/31/17 15:53 321-60-8 Terphenyl-d14 (S) 81 %. 25-150 1 01/25/17 09:39 01/31/17 15:53 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone ND uq/L 4.0 1 01/20/17 17:11 67-64-1 Benzene ND uq/L 0.50 1 01/20/17 17:11 71-43-2 Bromodichloromethane ND uq/L 0.50 1 01/20/17 17:11 75-27-4 Bromoform ND ug/L 0.50 1 01/20/17 17:11 75-25-2 Bromomethane ND ug/L 0.50 1 01/20/17 17:11 74-83-9 2-Butanone (MEK) ND 2.0 01/20/17 17:11 78-93-3 ug/L 1 Carbon disulfide ND 01/20/17 17:11 75-15-0 ug/L 1.0 1 Carbon tetrachloride ND ug/L 0.50 1 01/20/17 17:11 56-23-5 Chlorobenzene ND ug/L 0.50 01/20/17 17:11 108-90-7 1 Chloroethane ND ug/L 0.50 1 01/20/17 17:11 75-00-3 Chloroform ND ug/L 0.501 01/20/17 17:11 67-66-3 Chloromethane ND ug/L 0.50 1 01/20/17 17:11 74-87-3 1,2-Dibromo-3-chloropropane ND ug/L 0.20 1 01/20/17 17:11 96-12-8 Dibromochloromethane ND 0.50 ug/L 1 01/20/17 17:11 124-48-1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 01/20/17 17:11 106-93-4 Dichlorodifluoromethane ND 1.0 ug/L 1 01/20/17 17:11 75-71-8 1.1-Dichloroethane ND 0.50 01/20/17 17:11 75-34-3 ug/L 1 1,2-Dichloroethane ND 0.50 01/20/17 17:11 107-06-2 ug/L 1 1.1-Dichloroethene ND 0.50 ug/L 1 01/20/17 17:11 75-35-4 cis-1,2-Dichloroethene ND 01/20/17 17:11 156-59-2 ug/L 1.0 1 trans-1,2-Dichloroethene ND 0.50 ug/L 1 01/20/17 17:11 156-60-5 1,2-Dichloropropane ND ug/L 0.50 01/20/17 17:11 78-87-5 1 cis-1,3-Dichloropropene ND 0.50 01/20/17 17:11 10061-01-5 ua/L 1 trans-1,3-Dichloropropene ND 0.50 01/20/17 17:11 10061-02-6 ua/L 1 Ethylbenzene ND 0.50 01/20/17 17:11 100-41-4 ua/L 1 2-Hexanone ND ug/L 1.0 01/20/17 17:11 591-78-6 1 Isopropylbenzene (Cumene) ND ug/L 1.0 1 01/20/17 17:11 98-82-8 Methyl acetate ND ug/L 2.0 1 01/20/17 17:11 79-20-9 Methylene Chloride ND 0.50 ug/L 1 01/20/17 17:11 75-09-2 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 01/20/17 17:11 108-10-1 Methyl-tert-butyl ether ND 0.50 01/20/17 17:11 ug/L 1 1634-04-4 Styrene ND ug/L 1.0 1 01/20/17 17:11 100-42-5 1,1,2,2-Tetrachloroethane ND 0.50 01/20/17 17:11 79-34-5 ug/L 1 Tetrachloroethene ND 0.50 01/20/17 17:11 127-18-4 ug/L 1 Toluene ND ug/L 0.50 1 01/20/17 17:11 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 1 01/20/17 17:11 71-55-6 1.1.2-Trichloroethane ND ug/L 0.50 1 01/20/17 17:11 79-00-5 Trichloroethene ND 0.50 ug/L 1 01/20/17 17:11 79-01-6 Trichlorofluoromethane ND 0.50 01/20/17 17:11 75-69-4 ua/L 1

REPORT OF LABORATORY ANALYSIS

0.50

20

1

1

ND

ND

ug/L

ug/L

01/20/17 17:11 75-01-4

01/20/17 17:11 179601-23-1





ANALYTICAL RESULTS

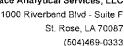
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PUMA TERMINAL GW SAMPLING

Page Project No.: 2048968

Date: 02/22/2017 06:26 AM

Pace Project No.: 2048968					12	312 K	WS!	
Sample: EB-011917	Lab ID: 204	8968009	Collected: 01/19/1	7 10:00	Received	182	atix Water	
Parameters	Results	Units	Report Limit	DF	Prepared		CAS No.	Qual
8260 MSV Low Level	Analytical Met	nod: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		01/20/17 17:11	95-47-6	
Dibromofluoromethane (S)	96	%.	72-126	1		01/20/17 17:11	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/20/17 17:11	460-00-4	
Toluene-d8 (S)	104	%.	79-119	1		01/20/17 17:11	2037-26-5	
Sample: MW-77B	Lab ID: 204	8968010	Collected: 01/19/1	7 11:17	Received: 01	/19/17 15:39 N	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	nod: EPA 8	015B Modified Prepa	ration M	lethod: EPA 3535	·		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 14:47		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		02/02/17 14:47		
n-Pentacosane (S)	17	%.	16-137	1	01/24/17 12:12	02/02/17 14:47	629-99-2	
o-Terphenyl (S)	44	%.	10-121	1	01/24/17 12:12	02/02/17 14:47	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/26/17 01:46		
4-Bromofluorobenzene (S)	102	%.	44-148	1		01/26/17 01:46	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation Meth	nod: EP/	A 3010			
Arsenic	0.0015	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:04	7440-38-2	
Chromium	0.0072	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:04	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:04	7439-92-1	
Vanadium	0.026	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:04	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EP/	4 3005A			
Arsenic, Dissolved	1.0	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:09	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:09	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:09	7439-92-1	
Vanadium, Dissolved	6.4	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:09	7440-62-2	
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP/	A 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:18	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EP	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:30	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparat	ion Meth	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	208-96-8	
Anthracene	ND	ug/L	0.10	1		01/31/17 16:13		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	56-55-3	





ANALYTICAL RESULTS

Project:

Methylene Chloride

Date: 02/22/2017 06:26 AM

PUMA TERMINAL GW SAMPLING

Pace Project No .: 2048968 Sample: MW-77B Lab ID: 2048968010 Collected: 01/19/17 11:17 Parameters Results Units DF Report Limit AS No Qual 8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 Benzo(a)pyrene ND 0.10 ug/L 1 Benzo(b)fluoranthene NΩ 0.10 ug/L 01/25/17 09:39 01/31/17 16:13 205-99-2 1 Benzo(g,h,i)perylene ND 0.10 ug/L 1 Benzo(k)fluoranthene ND ug/L 0.10 01/25/17 09:39 01/31/17 16:13 207-08-9 1 Chrysene ND ug/L 0.10 01/25/17 09:39 01/31/17 16:13 218-01-9 1 Dibenz(a,h)anthracene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 16:13 53-70-3 Fluoranthene ND ug/L 0.10 01/25/17 09:39 01/31/17 16:13 206-44-0 1 Fluorene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 16:13 86-73-7 Indeno(1,2,3-cd)pyrene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 16:13 193-39-5 2-Methylnaphthalene ND 0.10 ug/L 1 01/25/17 09:39 01/31/17 16:13 91-57-6 Naphthalene ND 0.10 01/25/17 09:39 01/31/17 16:13 91-20-3 ug/L 1 Phenanthrene ND ug/L 0.10 01/25/17 09:39 01/31/17 16:13 85-01-8 Pyrene ND ug/L 0.10 1 01/25/17 09:39 01/31/17 16:13 129-00-0 Surrogates 2-Fluorobiphenyl (S) 66 25-150 1 01/25/17 09:39 01/31/17 16:13 321-60-8 Terphenyl-d14 (S) 76 %. 25-150 1 01/25/17 09:39 01/31/17 16:13 1718-51-0 8260 MSV Low Level Analytical Method: EPA 5030B/8260 Acetone ND ug/L 4.0 1 01/20/17 17:30 67-64-1 Benzene ND ug/L 0.50 1 01/20/17 17:30 71-43-2 Bromodichloromethane ND ug/L 0.50 1 01/20/17 17:30 75-27-4 Bromoform ND 0.50 ug/L 01/20/17 17:30 75-25-2 1 Bromomethane ND ug/L 0.50 01/20/17 17:30 74-83-9 1 2-Butanone (MEK) ND 2.0 ug/L 1 01/20/17 17:30 78-93-3 Carbon disulfide ND ug/L 1.0 1 01/20/17 17:30 75-15-0 Carbon tetrachloride ND 0.50 ug/L 1 01/20/17 17:30 56-23-5 Chlorobenzene ND 0.50 ug/L 1 01/20/17 17:30 108-90-7 Chloroethane ND ua/L 0.50 01/20/17 17:30 75-00-3 1 Chloroform ND 0.50 01/20/17 17:30 67-66-3 uq/L 1 Chloromethane ND ug/L 0.50 01/20/17 17:30 74-87-3 1 1,2-Dibromo-3-chloropropane ND ug/L 0.20 01/20/17 17:30 96-12-8 1 Dibromochloromethane ND ug/L 0.50 01/20/17 17:30 124-48-1 1 1,2-Dibromoethane (EDB) ND ug/L 1.0 1 01/20/17 17:30 106-93-4 Dichlorodifluoromethane ND ug/L 1.0 1 01/20/17 17:30 75-71-8 1.1-Dichloroethane ND 0.50 ug/L 1 01/20/17 17:30 75-34-3 1.2-Dichloroethane ND ug/L 0.50 1 01/20/17 17:30 107-06-2 1,1-Dichloroethene ND ug/L 0.50 01/20/17 17:30 75-35-4 1 cis-1.2-Dichloroethene ND ug/L 1.0 1 01/20/17 17:30 156-59-2 trans-1.2-Dichloroethene ND ug/L 0.50 01/20/17 17:30 156-60-5 1,2-Dichloropropane ND ug/L 0.50 01/20/17 17:30 78-87-5 cis-1,3-Dichloropropene ND ug/L 0.50 01/20/17 17:30 10061-01-5 trans-1,3-Dichloropropene ND ug/L 0.50 01/20/17 17:30 10061-02-6 Ethylbenzene NΩ 0.50 ug/L 01/20/17 17:30 100-41-4 2-Hexanone NΩ ug/L 1.0 01/20/17 17:30 591-78-6 Isopropylbenzene (Cumene) ND ug/L 1.0 01/20/17 17:30 98-82-8 Methyl acetate ND ug/L 2.0 01/20/17 17:30 79-20-9

REPORT OF LABORATORY ANALYSIS

0.50

ND

ug/L

01/20/17 17:30 75-09-2

1000 Riverbend Blvd - Suite F

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

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PUMA TERMINAL GW SAMPLING

Date: 02/22/2017 06:26 AM

Pace Project No.: 2048968					[4]	/`\ <i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>	/14/	
Sample: MW-77B	Lab ID: 204	8968010	Collected: 01/19/1	7 11:17	Recei		ti k: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	OFARCE	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 17:30	108-10-1	
Methyl-terf-butyl ether	ND	ug/L	0.50	1		01/20/17 17:30	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 17:30	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 17:30	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 17:30	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 17:30	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:30		
Trichloroethene	ND	ug/L	0.50	1		01/20/17 17:30		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 17:30		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 17:30		
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 17:30		
o-Xylene	ND	ug/L	1.0	1		01/20/17 17:30		
Surrogates	ND	ugr	1.0	'		0 1/20/17 17.50	95-47-0	
Dibromofluoromethane (S)	95	%.	72-126	1		01/20/17 17:30	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/20/17 17:30		
Toluene-d8 (S)	105	%.	79-119	1		01/20/17 17:30		
Tolderie de (e)	100	70.	75-119	'		01/20/17 17.30	2037-20-3	
Sample: MW-20B	Lab ID: 204	8968011	Collected: 01/19/1	17 12:25	Received: 01	/19/17 15:39 N	latrix: Water	
Sample: MW-20B Parameters	Lab ID: 204	8968011 Units	Collected: 01/19/1	17 12:25 DF	Received: 01 Prepared	/19/17 15:39 N Analyzed	latrix: Water CAS No.	Qual
Parameters	Results	Units		DF	Prepared	Analyzed		Qual
Parameters 8015M DRO/ORO Organics	Results Analytical Meth	Units	Report Limit	DF tration M	Prepared 1ethod: EPA 3535	Analyzed		Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40)	Results	Units	Report Limit	DF	Prepared Method: EPA 3535 01/24/17 12:12	Analyzed		Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates	Results Analytical Meth ND ND	Units nod: EPA 80 mg/L mg/L	Report Limit 015B Modified Prepa 0.50 1.0	DF tration M	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16	CAS No.	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S)	Results Analytical Method ND ND 47	Units nod: EPA 80 mg/L mg/L %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137	DF tration M 1 1 .	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16	CAS No.	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S)	Results Analytical Method ND ND 47 54	Units nod: EPA 80 mg/L mg/L %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF tration M	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16	CAS No.	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO	Results Analytical Method ND ND 47 54 Analytical Method	Units mod: EPA 86 mg/L mg/L %. %. nod: EPA 86	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121	DF Iration M 1 1 1 1	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16	CAS No.	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics	Results Analytical Method ND ND 47 54	Units nod: EPA 80 mg/L mg/L %.	Report Limit 015B Modified Prepa 0.50 1.0 16-137 10-121	DF tration M 1 1 .	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16	CAS No.	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates	Results Analytical Method ND ND 47 54 Analytical Method	Units mod: EPA 86 mg/L mg/L %. %. nod: EPA 86	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121	DF Iration M 1 1 1 1	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16	CAS No. 629-99-2 84-15-1	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	Results Analytical Method ND ND 47 54 Analytical Method ND 98	Units nod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %.	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021	DF iration N 1 1 1 1 1	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12	CAS No. 629-99-2 84-15-1	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S)	Results Analytical Method ND ND 47 54 Analytical Method ND 98	Units mod: EPA 86 mg/L %. hod: EPA 86 ug/L %. hod: EPA 66	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 015/8021 50.0 44-148	DF iration N 1 1 1 1 1	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12	CAS No. 629-99-2 84-15-1 460-00-4	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method	Units mod: EPA 86 mg/L %. hod: EPA 86 ug/L %. hod: EPA 66 mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methods	DF Iration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 A 3010 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND ND 0.0040	Units mod: EPA 86 mg/L %. nod: EPA 86 ug/L %. nod: EPA 66 mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methods 0.0010 0.0010	DF Iration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 A 3010 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 02/12/17 17:08 02/12/17 17:08	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND	Units mod: EPA 86 mg/L %. hod: EPA 86 ug/L %. hod: EPA 66 mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methods	DF Iration M 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 A 3010 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND 0.0040 ND ND	units mg/L mg/L %. hod: EPA 80 ug/L %. hod: EPA 60 mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Prepa 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Methods 0.0010 0.0010 0.0010	DF 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prepared Othod: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 A 3010 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF)	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND 0.0040 ND ND ND Analytical Method	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Method	DF Iration M 1 1 1 1 1 thod: EP: thod: EP:	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28) Oil Range Organics (>C28-C40) Surrogates n-Pentacosane (S) o-Terphenyl (S) 8021 GCV BTEX, MTBE, GRO Gasoline Range Organics Surrogates 4-Bromofluorobenzene (S) 6020 MET ICPMS Arsenic Chromium Lead Vanadium 6020 MET ICPMS, Dissolved (LF) Arsenic, Dissolved	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND 0.0040 ND ND Analytical Method	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. mg/L mg/L mg/L mg/L mg/L ug/L od: EPA 60 ug/L	Report Limit 0.15B Modified Preparation 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Method	DF Iration M 1 1 1 1 1 1 thod: EP: thod: EP: 1	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	Qual
Parameters 8015M DRO/ORO Organics Diesel Range Organic (C10-C28)	Results Analytical Method ND 47 54 Analytical Method ND 98 Analytical Method ND 0.0040 ND ND ND Analytical Method	Units mod: EPA 80 mg/L mg/L %. nod: EPA 80 ug/L %. mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Report Limit 0.15B Modified Preparation 0.50 1.0 16-137 10-121 0.15/8021 50.0 44-148 0.20 Preparation Method	DF Iration M 1 1 1 1 1 hod: EP hod: EP	Prepared Method: EPA 3535 01/24/17 12:12 01/24/17 12:12 01/24/17 12:12 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30 01/24/17 08:30	Analyzed 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 02/02/17 15:16 01/26/17 02:12 01/26/17 02:12 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08 02/12/17 17:08	CAS No. 629-99-2 84-15-1 460-00-4 7440-38-2 7440-47-3 7439-92-1 7440-62-2	Qual



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ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

Sample: MW-20B

Date: 02/22/2017 06:26 AM

Lab ID: 2048968011

Collected: 01/19/17 12:25

25 Rec

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Meth	nod: EPA 747	0 Preparation Met	hod: EF	PA 7470			
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:21	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	nod: EPA 747	0 Preparation Met	hod: EF	PA 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:32	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 827	0 by SIM Preparat	ion Met	thod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	207-08-9	
Chrysene	ND	ug/L	0.10	1		01/31/17 16:33		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	129-00-0	
Surrogates	0.4	0/	55.450		04/05/47 00 00	041044424000		
2-Fluorobiphenyl (S)	61	%.	25-150	1		01/31/17 16:33		
Terphenyl-d14 (S)	69	%.	25-150	1	01/25/17 09:39	01/31/17 16:33	1718-51-0	
8260 MSV Low Level	Analytical Metl	nod: EPA 503	80B/8260					
Acetone	ND	ug/L	4.0	1		01/20/17 17:48	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 17:48	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 17:48	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 17:48	75-25-2	
Bromomethane	· ND	ug/L	0.50	1		01/20/17 17:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 17:48	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 17:48	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 17:48	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 17:48	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 17:48	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 17:48	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 17:48	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 17:48	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 17:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 17:48	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 17:48	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:48	75-34-3	
1,2-Dichloroethane	. ND	ug/L	0.50	1		01/20/17 17:48	107-06-2	

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.

2048968

Sample: MW-20B Lab ID: 2048968011 Collected: 01/19/17 12:25 Parameters DF Results Units Report Limit Prepare CAS No. Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 1.1-Dichloroethene ND 0.50 01/20/17 17:48 75-35-4 ug/L 1 cis-1,2-Dichloroethene ND ug/L 1.0 1 01/20/17 17:48 156-59-2 trans-1.2-Dichloroethene ND 0.50 ug/L 1 01/20/17 17:48 156-60-5 1,2-Dichloropropane ND ug/L 0.50 01/20/17 17:48 78-87-5 1 cis-1,3-Dichloropropene ND 0.50 01/20/17 17:48 10061-01-5 ug/L 1 trans-1,3-Dichloropropene ND ug/L 0.50 1 01/20/17 17:48 10061-02-6 Ethylbenzene ND uq/L 0.50 01/20/17 17:48 100-41-4 1 2-Hexanone ND ug/L. 1.0 01/20/17 17:48 591-78-6 1 Isopropylbenzene (Cumene) ND uq/L 1.0 1 01/20/17 17:48 98-82-8 Methyl acetate ND 2.0 ug/L 1 01/20/17 17:48 79-20-9 Methylene Chloride ND 0.50 01/20/17 17:48 75-09-2 ug/L 1 01/20/17 17:48 108-10-1 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 1 Methyl-tert-butyl ether ND 0.50 01/20/17 17:48 1634-04-4 ug/L Styrene ND ug/L 1.0 01/20/17 17:48 100-42-5 1,1,2,2-Tetrachloroethane ND ug/L 0.50 01/20/17 17:48 79-34-5 1 Tetrachloroethene ND ug/L 0.50 01/20/17 17:48 127-18-4 1 Toluene ND ug/L 0.501 01/20/17 17:48 108-88-3 1,1,1-Trichloroethane ND ug/L 0.50 1 01/20/17 17:48 71-55-6 01/20/17 17:48 79-00-5 1,1,2-Trichloroethane ND ug/L 0.50 1 Trichloroethene ND 01/20/17 17:48 79-01-6 0.50 ug/L 1 Trichtorofluoromethane ND 0.50 01/20/17 17:48 75-69-4 ug/L 1 Vinyl chloride ND 0.50 ug/L 01/20/17 17:48 75-01-4 1 01/20/17 17:48 179601-23-1 m&p-Xylene ND ug/L 2.0 1 o-Xylene ND ug/L 01/20/17 17:48 95-47-6 1.0 1 Surrogates Dibromofluoromethane (S) 96 %. 72-126 1 01/20/17 17:48 1868-53-7 4-Bromofluorobenzene (S) 99 %. 68-124 1 01/20/17 17:48 460-00-4 Toluene-d8 (S) 105 % 79-119 01/20/17 17:48 2037-26-5 Sample: MW-78B Lab ID: 2048968012 Collected: 01/19/17 13:15 Received: 01/19/17 15:39 Matrix: Water Parameters Results Units Report Limit DF CAS No. Quai Prepared Analyzed 8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535 Diesel Range Organic (C10-C28) ND mg/L 0.50 01/24/17 12:12 02/02/17 15:44 Oil Range Organics (>C28-C40) ND mg/L 01/24/17 12:12 02/02/17 15:44 1.0 1 Surrogates n-Pentacosane (S) 43 % 16-137 01/24/17 12:12 02/02/17 15:44 629-99-2 1 o-Terphenyl (S) 45 %. 10-121 01/24/17 12:12 02/02/17 15:44 84-15-1 1 8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021 Gasoline Range Organics ND ug/L 50.0 1 01/26/17 02:40 Surrogates

REPORT OF LABORATORY ANALYSIS

44-148

100

4-Bromofluorobenzene (S)

01/26/17 02:40 460-00-4

St. Rose, LA 70087 (504)469-0333



Date: 02/22/2017 06:26 AM

ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968	AL GVV SAWIPLING				剧》	egran	8	•
Sample: MW-78B	Lab ID: 2048	3968012	Collected: 01/19/17	13:15	Received: 02	MARK	atux: Water	
Parameters	Results	Units	Report Limit	DF	RUMIC		CAS No.	Qual
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Metho-	d: EPA	A 3010	LICE		
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7440-38-2	
Chromium	0.0074	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:12	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Meth	iod: EPA 60	020 Preparation Metho	d: EPA	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7440-38-2	
Chromium, Dissolved	7.2	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:17	7440-62-2	
7470 Mercury	Analytical Meth	nod: EPA 74	470 Preparation Metho	d: EP/	A 7470			
Mercury	0.93	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:23	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Meth	od: EPA 7	470 Preparation Metho	d: EPA	A 7 47 0			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:35	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparation	n Metr	nod: EPA 3510			
Acenaphthene,	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1		01/31/17 16:53		
Benzo(a)pyrene	ND	ug/L	0.10	1		01/31/17 16:53		
Benzo(b)fluoranthene	ND	ug/L	0.10	1		01/31/17 16:53		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1		01/31/17 16:53		
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/31/17 16:53		
Chrysene	ND	ug/L	0.10	1		01/31/17 16:53		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1		01/31/17 16:53		
Fluoranthene	ND	ug/L	0.10	1		01/31/17 16:53		
Fluorene	ND	ug/L	0.10	1		01/31/17 16:53		
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/31/17 16:53		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/31/17 16:53		
Naphthalene	ND	ug/L	0.10	1		01/31/17 16:53		
Phenanthrene	ND	ug/L	0.10	1		01/31/17 16:53		
Pyrene	ND	ug/L	0.10	1		01/31/17 16:53		
Surrogates		Ug/ L	0.10	•	01720711 00.00	0 1/0 1/11 10.00	120 00 0	
2-Fluorobiphenyl (S)	78	%.	25-150	1	01/25/17 09:39	01/31/17 16:53	321-60-8	
Terphenyl-d14 (S)	84	%.	25-150	1		01/31/17 16:53		
8260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260					
Acetone	ND	ug/L	4 .0	1		01/20/17 18:06	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 18:06		
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 18:06		
Bromoform	ND	ug/L	0.50	1		01/20/17 18:06		
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:06		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 18:06		
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

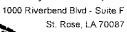
Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/22/2017 06:26 AM

Sample: MW-78B Lab ID: 2048968012 Collected: 01/19/17 13:15 Received: 01/79/77 13:15 Received: 0

		Concoled. Biriori	10.10						
Parameters	Results	Units	Report Limit	DF	Prepared A CAS No. Q)uai			
8260 MSV Low Level	Analytical Method: EPA 5030B/8260								
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 18:06 75-15-0				
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 18:06 56-23-5				
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 18:06 108-90-7				
Chloroethane	ND	ug/L	0.50	1	01/20/17 18:06 75-00-3				
Chloroform	ND	ug/L	0.50	1	01/20/17 18:06 67-66-3				
Chloromethane	ND	ug/L	0.50	1	01/20/17 18:06 74-87-3				
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 18:06 96-12-8				
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 18:06 124-48-1				
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 18:06 106-93-4				
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/20/17 18:06 75-71-8				
1,1-Dichloroethane	ND	ug/L	0.50	1	01/20/17 18:06 75-34-3				
1,2-Dichloroethane	ND	ug/L	0.50	1	01/20/17 18:06 107-06-2				
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 18:06 75-35-4				
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/20/17 18:06 156-59-2				
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/20/17 18:06 156-60-5				
1,2-Dichloropropane	ND	ug/L	0.50	1	01/20/17 18:06 78-87-5				
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 18:06 10061-01-5				
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 18:06 10061-02-6				
Ethylbenzene	ND	ug/L	0.50	1	01/20/17 18:06 100-41-4				
2-Hexanone	ND	ug/L	1.0	1	01/20/17 18:06 591-78-6				
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 18:06 98-82-8				
Methyl acetate	ND	ug/L	2.0	1	01/20/17 18:06 79-20-9				
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 18:06 75-09-2				
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 18:06 108-10-1				
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/20/17 18:06 1634-04-4				
Styrene	ND	ug/L	1.0	1	01/20/17 18:06 100-42-5				
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 18:06 79-34-5				
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 18:06 127-18-4				
Toluene	ND	ug/L	0.50	1	01/20/17 18:06 108-88-3				
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 18:06 71-55-6				
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 18:06 79-00-5				
Trichloroethene	ND	ug/L	0.50	1	01/20/17 18:06 79-01-6				
Trichlorofluoromethane	ND	ug/L	0.50	1	01/20/17 18:06 75-69-4				
Vinyl chloride	ND	ug/L	0.50	1	01/20/17 18:06 75-01-4				
m&p-Xylene	ND	ug/L	2.0	1	01/20/17 18:06 179601-23-1				
o-Xylene	ND	ug/L	1.0	1	01/20/17 18:06 95-47-6				
Surrogates		-5 -	· · ·	·	V., = 0,				
Dibromofluoromethane (S)	96	%.	72-126	1	01/20/17 18:06 1868-53-7				
4-Bromofluorobenzene (S)	97	%.	68-124	1	01/20/17 18:06 460-00-4				
Toluene-d8 (S)	105	%.	79-119	1	01/20/17 18:06 2037-26-5				



(504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

Date: 02/22/2017 06:26 AM

2048968

Pace Project No.: 2048968						141	100 / h)		
Sample: MW-21B	Lab ID:	2048968013	Collected:	01/19/	17 13:56	Received	5)	(V) Water	
Parameters	Results	Units	Repo	rt Limit	DF	Prepared	Conaldication	CAS No.	Qual
8015M DRO/ORO Organics	Analytical	Method: EPA 80	015B Modifie	ed Prepa	aration M	ethod: EPA 3535	j		
Diese! Range Organic (C10-C28)	N	D mg/L		0.50	1	01/24/17 12:12	02/02/17 16:12		
Oil Range Organics (>C28-C40)	N	D mg/L		1.0	1	01/24/17 12:12	02/02/17 16:12		
Surrogates		0 0/		40.40=					
n-Pentacosane (S) o-Terphenyl (S)	3			16-137 10-121	1 1		02/02/17 16:12		
				10-121	ı	01/24/17 12:12	02/02/17 16:12	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical	Method: EPA 80	015/8021						
Gasoline Range Organics	Ni	D ug/L		50.0	1		01/26/17 03:07		
Surrogates 4-Bromofluorobenzene (S)	10.	2 %.		44-148	1		01/26/17 03:07	460.00.4	
							01/20/17 03:07	400-00-4	
6020 MET ICPMS	Analytical	Method: EPA 60)20 Prepara	ation Met	hod: EPA	A 3010			
Arsenic	N	D mg/L		0.0010	1	01/24/17 08:30	02/12/17 17:16	7440-38-2	
Chromium	0.004	0 mg/L		0.0010	1	01/24/17 08:30	02/12/17 17:16	7440-47-3	
Lead	N	D mg/L		0.0010	1	01/24/17 08:30	02/12/17 17:16	7439-92-1	
Vanadium	N	D mg/L		0.0050	1	01/24/17 08:30	02/12/17 17:16	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical	Method: EPA 60)20 Prepara	ation Met	hod: EPA	A 3005A			
Arsenic, Dissolved	NE	D ug/L		1.0	1	01/24/17 09:53	02/12/17 20:21	7440-38-2	
Chromium, Dissolved	2.	7 ug/L		1.0	1		02/12/17 20:21		
Lead, Dissolved	N	D ug/L		1.0	1		02/12/17 20:21		
Vanadium, Dissolved	N	O ug/L		5.0	1		02/12/17 20:21		
7470 Mercury	Analytical	Method: EPA 74	170 Prepara	ation Met	hod: EP/	1 7470			
Mercury	0.2	7 ug/L		0.20	1	01/24/17 08:59	01/24/17 17:25	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical	Method: EPA 74	170 Prepara	ation Met	hod: EPA	7470			
Mercury, Dissolved	N	O ug/L		0.20	1	01/24/17 09:49	01/24/17 19:37	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical	Method: EPA 82	270 by SIM	Preparat	tion Meth	od: EPA 3510			
Acenaphthene	N	D ug/L		0.10	1	01/25/17 09:39	01/31/17 17:13	83-32-9	
Acenaphthylene	NI	D ug/L		0.10	1	01/25/17 09:39	01/31/17 17:13	208-96-8	
Anthracene	N	D ug/L		0.10	1		01/31/17 17:13		
Benzo(a)anthracene	NI	D ug/L		0.10	1	01/25/17 09:39	01/31/17 17:13	56-55-3	
Benzo(a)pyrene	N	D ug/L		0.10	1	01/25/17 09:39	01/31/17 17:13	50-32-8	
Benzo(b)fluoranthene	N	_		0.10	1		01/31/17 17:13		
Benzo(g,h,i)perylene	N	D ug/L		0.10	1		01/31/17 17:13		
Benzo(k)fluoranthene	N!			0.10	1		01/31/17 17:13		
Chrysene	Ní	-		0.10	1		01/31/17 17:13		
Dibenz(a,h)anthracene	N(-		0.10	1		01/31/17 17:13		
Fluoranthene	NI	•		0.10	1		01/31/17 17:13		
Fluorene	N			0.10	1		01/31/17 17:13		
Indeno(1,2,3-cd)pyrene	N	•		0.10	1		01/31/17 17:13		
2-Methylnaphthalene	NI	Ų		0.10	1		01/31/17 17:13		
Naphthalene	NI			0.10	1		01/31/17 17:13		
Phenanthrene	NI			0.10	1		01/31/17 17:13		
		-							

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ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

Date: 02/22/2017 06:26 AM

2048968

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Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Metl	hod: EPA 827	0 by SIM Preparati	on Met	thod: EPA 3510			
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	25-150	1	01/25/17 09:39	01/31/17 17:13	321-60-8	
Terphenyl-d14 (S)	83	%.	25-150	1	01/25/17 09:39	01/31/17 17:13	1718-51-0	
8260 MSV Low Level	Analytical Met	hod: EPA 503	30B/8260					
Acetone	ND	ug/L	4.0	1		01/20/17 18:24	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 18:24	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 18:24	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 18:24	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 18:24	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 18:24	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 18:24	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 18:24	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 18:24	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 18:24	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 18:24	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 18:24	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 18:24		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 18:24		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 18:24	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:24		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:24		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:24		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 18:24		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:24		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 18:24		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:24		
trans-1,3-Dichloropropene	· ND	ug/L	0.50	1		01/20/17 18:24		
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 18:24		
2-Hexanone	ND	ug/L	1.0	1		01/20/17 18:24		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 18:24		
Methyl acetate	ND	ug/L	2.0	1		01/20/17 18:24		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 18:24		
4-Methyl-2-pentanone (MIBK)	ND ND	ug/L	1.0	1		01/20/17 18:24		
Methyl-tert-butyl ether	2.8	ug/L ug/L	0.50	1		01/20/17 18:24		
Styrene	ND	•	1.0	1		01/20/17 18:24		
1,1,2,2-Tetrachloroethane	ND ND	ug/L ug/L	0.50	1		01/20/17 18:24		
Tetrachloroethene	ND							
Toluene		ug/L	0.50	1		01/20/17 18:24 01/20/17 18:24		
1,1,1-Trichloroethane	ND	ug/L	0.50	1				
• •	ND	ug/L	0.50	1		01/20/17 18:24		
1,1,2-Trichloroethane Trichloroethene	ND	ug/L	0.50	1		01/20/17 18:24		
	ND	ug/L	0.50	1		01/20/17 18:24		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 18:24		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 18:24		
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 18:24	179601-23-1	

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Date: 02/22/2017 06:26 AM

ANALYTICAL RESULTS

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PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968					121	#5/18	<i>, S </i>	
Sample: MW-21B	Lab ID: 204	8968013	Collected: 01/19/1	7 13:56		/19/t) /15/24/2)	lari Water	
Parameters	Results	Units	Report Limit	DF	Prepared	119/11/16/99	.≱ CAS No.	Qual
8260 MSV Low Level	Analytical Meti	nod: EPA 50	030B/8260					
o-Xylene Surrogates	ND	ug/L	1.0	1		01/20/17 18:24	95-47-6	
Dibromofluoromethane (S)	96	%.	72-126	1		01/20/17 18:24	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1	•	01/20/17 18:24	460-00-4	
Toluene-d8 (S)	105	%.	79-119	1		01/20/17 18:24	2037-26-5	
Sample: DUP007	Lab ID: 204	8968014	Collected: 01/19/	17 00:00	Received: 01	/19/17 15:39 N	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Met	hod: EPA 8	015B Modified Prepa	ration M	ethod: EPA 3535	5		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 16:40		
Oil Range Organics (>C28-C40) Surrogates	ND	mg/L	1.0	1		02/02/17 16:40		
n-Pentacosane (S)	41	%.	16-137	1	01/24/17 12:12	02/02/17 16:40	629-99-2	
o-Terphenyl (S)	44	%.	10-121	1	01/24/17 12:12	02/02/17 16:40	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Met	hod: EPA 8	015/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/26/17 03:35		
4-Bromofluorobenzene (S)	101	%.	44-148	1		01/26/17 03:35	460-00-4	
6020 MET ICPMS	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EPA	¥ 30 10			
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:20	7440-38-2	
Chromium	0.0040	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:20	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:20	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:20	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Met	hod: EPA 6	020 Preparation Met	hod: EP#	A 3005A			
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:25	7440-38-2	
Chromium, Dissolved	2.8	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:25	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:25	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:25	7440-62-2	
7470 Mercury	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EPA	A 74 70			
Mercury	0.27	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:27	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Met	hod: EPA 7	470 Preparation Met	hod: EPA	A 7470			
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:39	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Met	hod: EPA 8	270 by SIM Preparat	ion Meth	nod: EPA 3510			
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	56-55-3	

St. Rose, LA 70087 (504)469-0333



ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

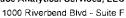
Pace Project No.:

Date: 02/22/2017 06:26 AM

2048968

Sample:	DUP007	Lab ID:	2048968014	Collected: 01/19/17 0	00:00
	Parametere	Daguite	Unite	Panort Limit - f)E

Sample: DUP007	Lab ID: 204	8968014	Collected: 01/19/	17 00:00			otrik: Water	
Parameters	Results	Units	Report Limit	DF	Pre Ligi	A CONTROL	CAS No.	Qual
8270 MSSV PAH by SIM SEP	Analytical Meth	nod: EPA 8	270 by SIM Preparat	ion Meth		City		
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1		01/31/17 17:33		
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1		01/31/17 17:33		
2-Methylnaphthalene	ND	ug/L	0.10	1		01/31/17 17:33		
Naphthalene	ND	ug/L	0.10	1		01/31/17 17:33		
Phenanthrene	ND	ug/L	0.10	1		01/31/17 17:33		
Pyrene	ND	ug/L	0.10	1		01/31/17 17:33		
Surrogates		<i>-9,</i> -	0.10	,	0 1/20/11 00:00	0 1/0 1/1/ 1/1.00	,20 00 0	
2-Fluorobiphenyl (S)	72	%.	25-150	1	01/25/17 09:39	01/31/17 17:33	321-60-8	
Terphenyl-d14 (S)	74	%.	25-150	1		01/31/17 17:33		
8260 MSV Low Level	Analytical Meth	nod: EPA 5	030B/8260			· ·		
Acetone	ND	ug/L	4.0	1		01/20/17 18:42	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 18:42		
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 18:42		
Bromoform	ND	ug/L	0.50	1		01/20/17 18:42		
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:42		
2-Butanone (MEK)	ND ND	ug/L	2.0	1		01/20/17 18:42		
Carbon disulfide	ND	ug/L ug/L	1.0	1		01/20/17 18:42		
Carbon tetrachloride	ND ND	ug/L ug/L	0.50	1		01/20/17 18:42		•
Chlorobenzene	ND		0.50	1				
Chloroethane	ND ND	ug/L		1		01/20/17 18:42		
Chloroform	•	ug/L	0.50	1		01/20/17 18:42		
	ND	ug/L	0.50			01/20/17 18:42		
Chloromethane	ND	ug/L	0.50	1		01/20/17 18:42		
1,2-Dibromo-3-chloropropane	ND ND	ug/L	0.20	1		01/20/17 18:42		
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 18:42		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 18:42		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 18:42		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:42		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:42		
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:42		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 18:42		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:42		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 18:42		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:42		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:42		
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 18:42		
2-Hexanone	ND	ug/L	1.0	1		01/20/17 18:42		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 18:42	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 18:42		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 18:42	75-09-2	



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ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No .:

Date: 02/22/2017 06:26 AM

2048968

Sample: DUP007 Lab ID: 2048968014 Recei Collected: 01/19/17 00:00 Parameters Results Units DF Prepared Report Limit AS No Qual 8260 MSV Low Level Analytical Method: EPA 5030B/8260 4-Methyl-2-pentanone (MIBK) ND ug/L 1.0 01/20/17 18:42 108-10-1 1 Methyl-tert-butyl ether 2.8 01/20/17 18:42 1634-04-4 ug/L 0.50 1 Styrene ND ug/L 1.0 01/20/17 18:42 100-42-5 1 1,1,2,2-Tetrachloroethane ND 0.50 ug/L 1 01/20/17 18:42 79-34-5 Tetrachioroethene ND 0.50 01/20/17 18:42 127-18-4 ug/L 1 Toluene ND 0.50 01/20/17 18:42 108-88-3 ug/L 1 1,1,1-Trichloroethane ND ug/L 0.50 1 01/20/17 18:42 71-55-6 1,1,2-Trichloroethane ND 0.50 ug/L 1 01/20/17 18:42 79-00-5 Trichloroethene ND 0.50 ug/L 1 01/20/17 18:42 79-01-6 Trichlorofluoromethane ND ug/L 0.50 1 01/20/17 18:42 75-69-4 Vinyl chloride ND ug/L 0.50 1 01/20/17 18:42 75-01-4 m&p-Xylene ND ug/L 2.0 01/20/17 18:42 179601-23-1 1 o-Xylene ND ug/L 1.0 01/20/17 18:42 95-47-6 Surrogates Dibromofluoromethane (S) 95 %. 72-126 1 01/20/17 18:42 1868-53-7 4-Bromofluorobenzene (S) 99 68-124 %. 1 01/20/17 18:42 460-00-4 Toluene-d8 (S) 106 %. 79-119 1 01/20/17 18:42 2037-26-5

Sample: FB-011917	Lab ID: 204	8968015	Collected: 01/19/1	7 14:02	Received: 0	1/19/17 15:39 N	1atrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Met	nod: EPA 80)15/8021					
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		01/26/17 04:01		
4-Bromofluorobenzene (S)	102	%.	44-148	1		01/26/17 04:01	460-00-4	
8260 MSV Low Level	Analytical Met	hod: EPA 50	030B/8260					
Acetone	ND	ug/L	4.0	1		01/20/17 19:01	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 19:01	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 19:01	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 19:01	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 19:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 19:01	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	* *	01/20/17 19:01	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 19:01	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	•	01/20/17 19:01	108-90-7	
Chioroethane	ND	ug/L	0.50	1		01/20/17 19:01	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 19:01	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 19:01	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 19:01	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 19:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 19:01	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 19:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 19:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 19:01	107-06-2	



ANALYTICAL RESULTS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

Date: 02/22/2017 06:26 AM

2048968

Sample: FB-011917	Lab ID: 204	8968015	Collected: 01/19/1	7 14:02	Received: 0	1/19/17 15:39 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Meth	nod: EPA 50	030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 19:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 19:01	156-59-2	
trans-1,2-Dichloroethene	ND ND	ug/L	0.50	1		01/20/17 19:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 19:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 19:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 19:01	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 19:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 19:01	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 19:01	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 19:01	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 19:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 19:01		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 19:01		
Styrene	ND	ug/L	1.0	1		01/20/17 19:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 19:01	_	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 19:01	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 19:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 19:01		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 19:01		
Trichloroethene	ND	ug/L	0.50	1		01/20/17 19:01	-	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 19:01		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 19:01		
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 19:01		
o-Xylene	ND	ug/L	1.0	1		01/20/17 19:01		
Surrogates	.,2	-3	1.0	•		. 5.125/11 10.01	55 11 0	
Dibromofluoromethane (S)	94	%.	72-126	1		01/20/17 19:01	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 19:01		
Toluene-d8 (S)	107	%.	79-119	1		01/20/17 19:01		





Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

QC Batch:

72788

Analysis Method:

EPA 8015/8021

QC Batch Method:

EPA 8015/8021

Analysis Description:

8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples:

2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

METHOD BLANK:

Matrix: Water

Associated Lab Samples:

2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008,

2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

Parameter Units

Reporting Blank Limit

LCS

Result

ND

103

Analyzed Qualifiers

Gasoline Range Organics 4-Bromofluorobenzene (S) Result

01/25/17 19:25 50.0 01/25/17 19:25 44-148

LABORATORY CONTROL SAMPLE: 304893

Parameter

Spike Conc

LCS % Rec % Rec Limits

61-136

44-148

Qualifiers

Gasoline Range Organics 4-Bromofluorobenzene (S) Units ug/L %.

ug/L

%

500

103 103

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

304894

MSD

304895

MS

Max

Parameter Gasoline Range Organics

Date: 02/22/2017 06:26 AM

2048968004 Spike Result

Spike

MS

516

MSD

MSD % Rec % Rec Limits

RPD RPD

Qual

4-Bromofluorobenzene (S)

Units ug/L %.

Conc. Conc. ND 500

MS

Result 500

Resulf 537 506

% Rec 103 103

15-147

6 20

106 44-148



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

QC Batch:

72646

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

7470 Mercury

Associated Lab Samples:

Analysis Description: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

METHOD BLANK: 304310 Matrix: Water

Associated Lab Samples:

2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

Blank

Reporting Limit

Units

Result

Analyzed

102

1.0

Qualifiers

Mercury

ug/L

Units

ug/L

ND

01/24/17 16:43 0.20

LABORATORY CONTROL SAMPLE:

Parameter

304311

Spike

1

LCS

LCS

% Rec

Parameter Mercury

Date: 02/22/2017 06:26 AM

Conc.

Result

% Rec

Limits

80-120

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

304312

ND

304313

MSD

MS

1.0

MSD

99

% Rec

Max

Mercury

2048986001 Parameter Units Result

ug/L

MS Spike

Conc.

Spike Conc.

Result Result

0.99

MS % Rec

MSD % Rec Limits

RPD RPD

Qual 75-125 20



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

QC Batch:

72612

Analysis Method:

EPA 7470

QC Batch Method:

EPA 7470

Analysis Description:

7470 Mercury Dissolved

Associated Lab Samples:

2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304161

Matrix: Water

Associated Lab Samples:

2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

Blank

Reporting

Parameter

Units

Limit

Analyzed

Qualifiers

Mercury, Dissolved

ug/L

ND

0.20 01/24/17 18:41

LABORATORY CONTROL SAMPLE:

304162

Spike

Result

LCS Result LCS

% Rec

80-120

Parameter Mercury, Dissolved

Date: 02/22/2017 06:26 AM

Units ug/L

Conc. 1

1.0

% Rec 103

Qualifiers Limits

MS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

304163

MSD

304164

MSD MS MSD

% Rec

Max

2048890008 Spike Spike MS Parameter Units Result Conc. Conc. Result Result

% Rec

Limits

RPD RPD

Qual

% Rec Mercury, Dissolved ND 1.1 75-125 ug/L 1 1 91 90 20



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

QC Batch:

72609

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3010

Analysis Description:

6020 MET

Associated Lab Samples:

2048968012, 2048968013, 2048968014

METHOD BLANK: 304153

Matrix: Water

Associated Lab Samples:

Date: 02/22/2017 06:26 AM

2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/12/17 12:56	
Chromium	mg/L	ND	0.0010	02/12/17 12:56	
Lead	mg/L	ND	0.0010	02/12/17 12:56	
Vanadium	mg/L	ND	0.0050	02/12/17 12:56	

LABORATORY CONTROL SAMPLE:	304154					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	8 4 -115	
Vanadium	mg/L	.02	0.016	82	81-115	

MATRIX SPIKE & MATRIX SF	IKE DUPLIC	CATE: 30415	5		304156							
			MS	MSD								
		2048890008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	ND	.02	.02	0.016	0.020	80	101	80-120	23	20	R1
Chromium	mg/L	0.046	.02	.02	0.058	0.074	57	136	80-120	24	20	M1,R1
Lead	mg/L	ND	.02	.02	0.017	0.021	83	107	80-120	25	20	R1
Vanadium	mg/L	ND	.02	.02	0.0097	0.014	49	70	80-120	35	20	M1,R1



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

QC Batch:

72614

Analysis Method:

EPA 6020

QC Batch Method:

EPA 3005A

Analysis Description:

6020 MET Dissolved

Associated Lab Samples:

2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

METHOD BLANK: 304165

5 Matrix: Water

Associated Lab Samples:

Date: 02/22/2017 06:26 AM

2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Chromium, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Lead, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Vanadium, Dissolved	ug/L	ND	5.0	02/12/17 13:20	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
			-			
Arsenic, Dissolved	ug/L	20	20.6	103	80-120	
Chromium, Dissolved	ug/L	20	20.6	103	80-120	
Lead, Dissolved	ug/L	20	20.2	101	80-120	
Vanadium, Dissolved	ug/L	20	18.4	92	80-120	

MATRIX SPIKE & MATRIX S	PIKE DUPLIC		MS	MSD	304168							
		2048890008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic, Dissolved	ug/L	ND	20	20	19.5	19.5	96	97	75-125	0	20	
Chromium, Dissolved	ug/L	47.9	20	20	67.5	68.0	98	100	75-125	1	20	
Lead, Dissolved	ug/L	ND	20	20	20.3	20.6	102	103	75-125	2	20	
Vanadium, Dissolved	ug/L	ND	20	20	12.4	12.2	62	61	75-125	2	20	M1



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

QC Batch:

72642

Analysis Method:

EPA 5030B/8260

QC Batch Method:

EPA 5030B/8260

Analysis Description:

8260 MSV Low Level

Associated Lab Samples:

2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008,

Blank

2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

METHOD BLANK: 304302

Matrix: Water

Associated Lab Samples:

2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

		DIATIK	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND.	0.50	01/20/17 13:16	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1-Dichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1-Dichloroethene	ug/L	ND	0.50	01/20/17 13:16	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/20/17 13:16	
1,2-Dibromoethane (EDB)	ug/L	ND	- 1.0	01/20/17 13:16	
1,2-Dichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,2-Dichloropropane	ug/L	ND	0.50	01/20/17 13:16	
2-Butanone (MEK)	ug/L	ND	2.0	01/20/17 13:16	
2-Hexanone	ug/L	ND	1.0	01/20/17 13:16	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/20/17 13:16	
Acetone	ug/L	ND	4.0	01/20/17 13:16	
Benzene	ug/L	ND	0.50	01/20/17 13:16	
Bromodichloromethane	ug/L	ND	0.50	01/20/17 13:16	
Bromoform	ug/L	ND	0.50	01/20/17 13:16	
Bromomethane	ug/∟	ND	0.50	01/20/17 13:16	
Carbon disulfide	ug/L	ND	1.0	01/20/17 13:16	
Carbon tetrachloride	ug/L	ND	0.50	01/20/17 13:16	
Chlorobenzene	ug/L	ND	0.50	01/20/17 13:16	
Chloroethane	ug/L	ND	0.50	01/20/17 13:16	
Chloroform	ug/L	ND	0.50	01/20/17 13:16	
Chloromethane	ug/L	ND	0.50	01/20/17 13:16	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/20/17 13:16	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/20/17 13:16	
Dibromochloromethane	ug/L	ND	0.50	01/20/17 13:16	
Dichlorodifluoromethane	ug/L	ND	1.0	01/20/17 13:16	
Ethylbenzene	ug/L	ND	0.50	01/20/17 13:16	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/20/17 13:16	
m&p-Xylene .	ug/L	ND	2.0	01/20/17 13:16	
Methyl acetate	ug/L	ND	2.0	01/20/17 13:16	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/20/17 13:16	
Methylene Chloride	ug/L	ND	0.50	01/20/17 13:16	
o-Xylene	ug/L	ND	1.0	01/20/17 13:16	
Styrene	ug/L	ND	1.0	01/20/17 13:16	
Tetrachloroethene	ug/L	ND	0.50	01/20/17 13:16	
Toluene	ug/L	ND	0.50	01/20/17 13:16	•
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/20/17 13:16	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/20/17 13:16	
Trichloroethene	ug/L	ND	0.50	01/20/17 13:16	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

304302

METHOD BLANK:

Matrix: Water

Associated Lab Samples:

Date: 02/22/2017 06:26 AM

2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	01/20/17 13:16	
Vinyl chloride	ug/L	ND	0.50	01/20/17 13:16	
4-Bromofluorobenzene (S)	%.	99	68-124	01/20/17 13:16	
Dibromofluoromethane (S)	%	97	72-126	01/20/17 13:16	
Toluene-d8 (S)	%.	105	79-119	01/20/17 13:16	

LABORATORY CONTROL SAMPLE:	304303					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1-Trichloroethane	ug/L		43.1	86	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	39.5	79	15-179	
1,1,2-Trichloroethane	ug/L	50	44.5	89	58-144	
1,1-Dichloroethane	ug/L	50	42.3	85	63-129	
1,1-Dichloroethene	ug/L	50	40.0	80	51-139	
1,2-Dibromo-3-chloropropane .	ug/L	50	45.5	91	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.1	92	52-161	
1,2-Dichloroethane	ug/L	50	44.4	89	57-148	
1,2-Dichloropropane	ug/L	50	43.6	87	66-128	
2-Butanone (MEK)	ug/L	50	46.3	93	32-183	
2-Hexanone	ug/L	50	40.6	81	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.3	87	26-171	
Acetone	ug/L	50	45.0	90	22-165	
Benzene	ug/L	50	40.0	80	62-131	
Bromodichloromethane	ug/L	50	45.9	92	69-132	
Bromoform	ug/L	50	44.1	88	35-166	
Bromomethane	ug/L	50	65.4	131	34-158	
Carbon disulfide	ug/L	50	47.8	96	31-128	
Carbon tetrachloride	ug/L	50	44.9	90	54-144	
Chlorobenzene	ug/L	50	50.0	100	70-127	
Chloroethane	ug/L	50	73.6	147	17-195	
Chloroform	ug/L	50	43.1	86	73-134	
Chloromethane	ug/L	50	33.2	66	17-153	
cis-1,2-Dichloroethene	ug/L	50	41.7	83	68-129	
cis-1,3-Dichloropropene	ug/L	50	45.9	92	72-138	
Dibromochloromethane	ug/L	50	45.5	91	49-146	
Dichlorodifluoromethane	ug/L	50	36.0	72	10-179	
Ethylbenzene	ug/L	50	45.1	90	66-126	
Isopropylbenzene (Cumene)	ug/L	50	41.1	82	51-138	
m&p-Xylene	ug/L	100	91.2	91	65-129	
Methyl acetate	ug/L	50	43.6	87	20-142	
Methyl-tert-butyl ether	ug/L	50	44.8	90	37-166	
Methylene Chloride	ug/L	50	46.9	94	46-168	
o-Xylene	ug/L	50	42.7	85	65-124	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

LABORATORY CONTROL SAMPL	E: 304303					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Styrene	ug/L	50	47.7	95	72-133	
etrachloroethene	ug/L	50	46.5	93	46-157	
luene	ug/L	50	45.0	90	69-126	
ins-1,2-Dichloroethene	ug/L	50	40.7	81	60-129	
ns-1,3-Dichloropropene	ug/L	50	47.5	95	59-149	
chloroethene	ug/L	50	45.6	91	67-132	
hlorofluoromethane	ug/L	50	58.3	117	39-171	
yl chloride	ug/L	50	51.3	103	27-149	
romofluorobenzene (S)	%.			96	68-124	
omofluoromethane (S)	%.			98	72-126	
uene-d8 (S)	%.			103	79-119	

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	CATE: 30430	4		304305							
			MS	MSD								
		2048968003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
1,1,1-Trichloroethane	ug/L		50	50	49.5	47.3	99	95	54-137	5	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.5	42.3	85	85	15-187	1	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	47.1	47.7	94	95	59-148	1	20	
1,1-Dichloroethane	ug/L	ND	50	50	46.7	44.4	93	89	59-133	5	20	
1,1-Dichloroethene	ug/L	ND	50	50	46.5	43.6	93	87	44-146	6	20	
1,2-Dibromo-3- chloropropane	ug/L	ND	50	50	47.1	47.1	94	94	23-166	0	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	48.1	48.0	96	96	55-166	0	20	
1,2-Dichloroethane	ug/L	ND	50	50	46.8	45.8	94	92	56-154	2	20	
1,2-Dichloropropane	ug/L	ND	50	50	47.4	46.6	95	93	62-135	2	20	
2-Butanone (MEK)	ug/L	ND	50	50	46.4	45.3	93	91	20-205	2	20	
2-Hexanone	ug/L	ND	50	50	41.4	41.5	83	83	25-189	0	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	43 .7	44.0	87	88	23-184	1	20	
Acetone	ug/L	ND	50	50	45.9	48.0	92	96	11-217	4	20	
Benzene	ug/L	ND	50	50	44.4	42.8	89	86	52-141	4	20	
Bromodichloromethane	ug/L	ND	50	50	49.3	48.3	99	97	70-134	2	20	
Bromoform	ug/L	ND	50	50	46.4	46.7	93	93	37-171	1	20	
Bromomethane	ug/L	ND	50	50	73.8	70.8	148	142	34-155	4	20	
Carbon disulfide	ug/L	ND	50	50	57.9	51.8	116	104	28-130	11	20	
Carbon tetrachloride	ug/L	ND	50	50	52.2	49.5	104	99	48-146	- 5	20	
Chlorobenzene	ug/L	ND	50	50	54.8	54.0	110	108	67-129	1	20	
Chloroethane	ug/L	ND	50	50	89.1	80.3	178	161	12-192	10	20	
Chloroform	ug/L	0.62	50	50	47.7	46.1	94	91	66-143	3	20	
Chloromethane	ug/L	ND	50	50	38.1	35.8	76	72	14-155	6	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	45.6	44.0	91	88	56-141	4	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	48.9	48.1	98	96	70-139	2	20	
Dibromochloromethane	ug/L	ND	50	50	48.5	48.2	97	96	50-150	1	20	
Dichlorodifluoromethane	ug/L	ND	50	50	43.1	42.4	86	85	10-173	2	20	
Ethylbenzene	ug/L	ND	50	50	50.6	49.0	101	98	57-135	3	20	

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REPORT OF LABORATORY ANALYSIS

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Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

MATRIX SPIKE & MATRIX SPIR	KE DUPLK	CATE: 30430	4		304305							
			MS	MSD								
		2048968003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Isopropylbenzene (Cumene)	ug/L	ND	50	50	47.3	45.7	95	91	40-146	3	20	
m&p-Xylene	ug/L	ND	100	100	103	97.9	103	98	56-136	5	20	
Methyl acetate	ug/L	ND	50	50	41.7	42.6	83	85	10-142	2	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	46.4	46.1	93	92	35-176	1	20	
Methylene Chloride	ug/L	ND	50	50	50.2	48.7	100	97	45-166	3	20	
o-Xylene	ug/L	ND	50	50	47.8	46.9	96	94	57-133	2	20	
Styrene	ug/L	ND	50	50	51.5	50.5	103	101	58-144	2	20	
Tetrachloroethene	ug/L	ND	50	50	54.4	51.8	109	104	48-143	5	20	
Toluene	ug/L	ND	50	50	50.2	48.3	100	97	59-136	4	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	47.1	44.0	94	88	57-132	7	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	50.6	50.2	101	100	59-154	1	20	
Trichloroethene	ug/L	ND	50	50	51.8	49.7	104	99	58-140	4	20	
Trichlorofluoromethane	ug/L	ND	50	50	72.9	68.4	146	137	24-175	6	20	
Vinyl chloride	ug/L	ND	50	50	58.5	56.3	117	113	21-150	4	20	
4-Bromofluorobenzene (S)	%.						98	99	68-124			
Dibromofluoromethane (S)	%.						97	97	72-126			
Toluene-d8 (S)	%.						102	103	79-119			



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

QC Batch:

72656

Analysis Method:

EPA 8015B Modified

QC Batch Method:

EPA 3535

Analysis Description:

EPA 8015 ORO

Associated Lab Samples:

2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

METHOD BLANK: 304345

Matrix: Water

Associated Lab Samples:

Date: 02/22/2017 06:26 AM

2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	02/02/17 11:02	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	02/02/17 11:02	
n-Pentacosane (S)	%.	37	16-137	02/02/17 11:02	
o-Terphenyl (S)	%.	49	10-121	02/02/17 11:02	

LABORATORY CONTROL SAMPLE:	304346	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	ND -	20	10-115	
n-Pentacosane (S)	%.			18	16-137	
o-Terphenyl (S)	%.			25	10-121	



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

QC Batch:

73658

QC Batch Method:

EPA 3535

Analysis Method:

EPA 8015B Modified

Analysis Description:

EPA 8015 ORO

Associated Lab Samples:

2048968006

METHOD BLANK: 308983

Parameter

Diesel Range Organic (C10-C28)

Oil Range Organics (>C28-C40)

Matrix: Water

56

Associated Lab Samples:

2048968006

Blank Result	Reporting Limit	Analyzed	Qualifiers
ND	0.25	02/06/17 12:16	
ND	0.50	02/06/17 12:16	
55	16-137	02/06/17 12:16	

10-121 02/06/17 12:16

л-Pentacosane (S)

o-Terphenyl (S)

Units

mg/L

mg/L

%.

%.

LABORATORY CONTROL SAMPLE:	308984					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4		58	10-115	
n-Pentacosane (S)	%.			54	16-137	
o-Terphenyl (S)	%.			68	10-121	



Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

QC Batch:

72748

Analysis Method:

EPA 8270 by SIM

QC Batch Method:

EPA 3510

Analysis Description:

8270 Water by SIM MSSV

Associated Lab Samples:

2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,

2048968012, 2048968013, 2048968014

METHOD BLANK: 304752

Matrix: Water

Associated Lab Samples:

Date: 02/22/2017 06:26 AM

2048968012, 2048968013, 2048968014

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/31/17 13:14	
Acenaphthene	ug/L	ND	0.10	01/31/17 13:14	
Acenaphthylene	ug/L	ND	0.10	01/31/17 13:14	
Anthracene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(a)anthracene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(a)pyrene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Chrysene	ug/L	ND	0.10	01/31/17 13:14	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/31/17 13:14	
luoranthene	ug/L	ND	0.10	01/31/17 13:14	
luorene	ug/L	ND	0.10	01/31/17 13:14	
ndeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/31/17 13:14	
Naphthalene	ug/L	ND	0.10	01/31/17 13:14	
Phenanthrene	ug/L	ND	0.10	01/31/17 13:14	
Pyrene	ug/L	ND	0.10	01/31/17 13:14	
2-Fluorobiphenyl (S)	%.	78	25-150	01/31/17 13:14	
Terphenyl-d14 (S)	%.	82	25-150	01/31/17 13:14	

LABORATORY CONTROL SAMPLE:	304753					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.1		35-150	
Acenaphthene	ug/L	4	2.8	69	35-150	
Acenaphthylene	ug/L	4	2.8	69	35-150	
Anthracene	ug/L	4	3.9	96	35-150	
Benzo(a)anthracene	ug/L	4	3.2	80	35-150	
Benzo(a)pyrene	ug/L	4	3.0	75	35-150	
Benzo(b)fluoranthene	ug/L	4	3.0	75	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.3	84	35-150	
Benzo(k)fluoranthene	ug/L	4	2.9	71	35-150	
Chrysene	ug/L	4	3.1	77	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.3	83	35-150	
Fluoranthene	ug/L	4	3.1	77	35-150	
Fluorene	ug/L	4	2.8	70	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	. 4	3.3	84	35-150	
Naphthalene	ug/L	4	2.6	64	35-150	

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Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/22/2017 06:26 AM

LABORATORY CONTROL SAMPL	E: 304753					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Phenanthrene	ug/L	4	3.1	76	35-150	
Pyrene	ug/L	4	3.1	77	35-150	
2-Fluorobiphenyl (S)	%.			81	25-150	
Terphenyl-d14 (S)	%.			88	25-150	



QUALIFIERS

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

2048968

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72656

[1]

Batch: 73229

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 73444

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 73710

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

Date: 02/22/2017 06:26 AM

Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Reanalysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

C9 Common Laboratory Contaminant.

H2 Extraction or preparation conducted outside EPA method holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

S2 Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample

re-analysis).



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

_ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytic Batch
2048968002	EB-011817	EPA 3535	72656	EPA 8015B Modified	73444
048968003	MW-38A	EPA 3535	72656	EPA 8015B Modified	73444
048968004	MW-84B2	EPA 3535	72656	EPA 8015B Modified	73444
048968005	MW-84A	EPA 3535	72656	EPA 8015B Modified	73444
048968006	MW-17B	EPA 3535	72656	EPA 8015B Modified	73444
048968006	MW-17B	EPA 3535	73658	EPA 8015B Modified	73710
048968009	EB-011917	EPA 3535	72656	EPA 8015B Modified	73444
048968010	MW-77B	EPA 3535	72656	EPA 8015B Modified	73444
048968011	MW-20B	EPA 3535	72656	EPA 8015B Modified	73444
048968012	MW-78B	EPA 3535	72656	EPA 8015B Modified	73444
048968013	MW-21B	EPA 3535	72656	EPA 8015B Modified	73444
048968014	DUP007	EPA 3535	72656	EPA 8015B Modified	73444
048968001	TB-011817	EPA 8015/8021	72788		
048968002	EB-011817	EPA 8015/8021	72788		
048968003	MW-38A	EPA 8015/8021	72788		
048968004	MW-84B2	EPA 8015/8021	72788		
048968005	MW-84A	EPA 8015/8021	72788		
048968006	MW-17B	EPA 8015/8021	72788		
048968007	FB-011817	EPA 8015/8021	72788		
048968008	TB-011917	EPA 8015/8021	72788		
048968009	EB-011917	EPA 8015/8021	72788		
048968010	MW-77B	EPA 8015/8021	72788		
048968011	MW-20B	EPA 8015/8021	72788		
048968012	MW-78B	EPA 8015/8021	72788		
048968013	MW-21B	EPA 8015/8021	72788		
048968014	DUP007	EPA 8015/8021	72788		
048968015	FB-011917	EPA 8015/8021	72788		
048968002	EB-011817	EPA 3010	72609	EPA 6020	72692
048968003	MW-38A	EPA 3010	72609	EPA 6020	72692
048968004	MW-84B2	EPA 3010	72609	EPA 6020	72692
048968005	MW-84A	EPA 3010	72609	EPA 6020	72692
048968006	MW-17B	EPA 3010	72609	EPA 6020	72692
048968009	EB-011917	EPA 3010	72609	EPA 6020	72692
048968010	MW-77B	EPA 3010	72609	EPA 6020	72692
048968011	MW-20B	EPA 3010	72609	EPA 6020	72692
048968012	MW-78B	EPA 3010	72609	EPA 6020	72692
048968013	MW-21B	EPA 3010	72609	EPA 6020	72692
048968014	DUP007	EPA 3010	72609	EPA 6020	72692
048968002	EB-011817	EPA 3005A	72614	EPA 6020	72700
048968003	MW-38A	EPA 3005A	72614	EPA 6020	72700
048968004	MW-84B2	EPA 3005A	7261 4	EPA 6020	72700
048968005	MW-84A	EPA 3005A	72614	EPA 6020	72700
048968006	MW-17B	EPA 3005A	72614	EPA 6020	72700
048968009	EB-011917	EPA 3005A	72614	EPA 6020	72700
048968010	MW-77B	EPA 3005A	72614	EPA 6020	72700
048968011	MW-20B	EPA 3005A	72614	EPA 6020	72700



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Date: 02/22/2017 06:26 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048968012	MW-78B	EPA 3005A	 72614	EPA 6020	72700
2048968013	MW-21B	EPA 3005A	72614	EPA 6020	72700
2048968014	DUP007	EPA 3005A	72614	EPA 6020	72700
2048968002	EB-011817	EPA 7470	72646	EPA 7470	72694
2048968003	MW-38A	EPA 7470	72646	EPA 7470	72694
2048968004	MW-84B2	EPA 7470	72646	EPA 7470	72694
2048968005	MW-84A	EPA 7470	72646	EPA 7470	72694
2048968006	MW-17B	EPA 7470	72646	EPA 7470	72694
2048968009	EB-011917	EPA 7470	72646	EPA 7470	72694
2048968010	MW-77B	EPA 7470	72646	EPA 7470	72694
2048968011	MW-20B	EPA 7470	72646	EPA 7470	72694
2048968012	MW-78B	EPA 7470	72646	EPA 7470	72694
2048968013	MW-21B	EPA 7470	72646	EPA 7470	72694
2048968014	DUP007	EPA 7470	72646	EPA 7470	72694
2048968002	EB-011817	EPA 7470	72612	EPA 7470	72699
2048968003	MW-38A	EPA 7470	72612	EPA 7470	72699
2048968004	MW-84B2	EPA 7470	72612	EPA 7470	72699
2048968005	MW-84A	EPA 7470	72612	EPA 7470	72699
2048968006	MW-17B	EPA 7470	72612	EPA 7470	72699
2048968009	EB-011917	EPA 7470	72612	EPA 7470	72699
2048968010	MW-77B	EPA 7470	72612	EPA 7470	72699
2048968011	MW-20B	EPA 7470	72612	EPA 7470	72699
2048968012	MW-78B	EPA 7470	72612	EPA 7470	72699
2048968013	MW-21B	EPA 7470	72612	EPA 7470	72699
2048968014	DUP007	EPA 7470	72612	EPA 7470	72699
2048968002	EB-011817	EPA 3510	72748	EPA 8270 by SIM	73229
2048968003	MW-38A	EPA 3510	72748	EPA 8270 by SIM	73229
2048968004	MW-84B2	EPA 3510	72748	EPA 8270 by SIM	73229
2048968005	MW-84A	EPA 3510	72748	EPA 8270 by SIM	73229
2048968006	MW-17B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968009	EB-011917	EPA 3510	72748	EPA 8270 by SIM	73229
2048968010	MW-77B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968011	MW-20B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968012	MW-78B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968013	MW-21B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968014	DUP007	EPA 3510	72748	EPA 8270 by SIM	73229
2048968001	TB-011817	EPA 5030B/8260	72642		
2048968002	EB-011817	EPA 5030B/8260	72642		
2048968003	MW-38A	EPA 5030B/8260	72642		
2048968004	MW-84B2	EPA 5030B/8260	72642		
2048968005	MW-84A	EPA 5030B/8260	72642		
2048968006	MW-17B	EPA 5030B/8260	72642		
2048968007	FB-011817	EPA 5030B/8260	72642		
2048968008	TB-011917	EPA 5030B/8260	72642		
2048968009	EB-011917	EPA 5030B/8260	72642		
2048968010	MW-77B	EPA 5030B/8260	72642		
2048968011	MW-20B	EPA 5030B/8260	72642		





QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

PUMA TERMINAL GW SAMPLING

Pace Project No.:

Date: 02/22/2017 06:26 AM

2048968

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048968012	MW-78B	EPA 5030B/8260	72642		
2048968013	MW-21B	EPA 5030B/8260	72642		
2048968014	DUP007	EPA 5030B/8260	72642		
2048968015	FB-011917	EPA 5030B/8260	72642		

CHAIN-OF-CUSTODY / APPLIANCE BANGES DAGISMENT The Chain-of-Custody is a LEGAL DOCUMEN WO#: 2048968

Section C Invoice Information: 2048968

2075272		GROUND WATER DRINKING WATER	RA L OTHER		00				ine (Υ/N)	noldO Is	ਰੱ ਦਿ ਇ Pace Project No./ Lab I.D.				/						SAMPLE CONDITIONS			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	l on ly	mp in mp in mp in mples (Y/V)
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CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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65 of 6		!			<u>⊼</u> ₹	PRINT Name of SAMPLER:	Name of SAMPLER:	_		12	20/07		DA	DATE Signed	2	8	ξ.	тетр іт	avieceR (Y) aol	Custo O belsea N/Y)	səlqms: N/Y)
	Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid writin 30 days.	ing Pace's NET 3	9 day pay	L ment terms an	d agreeing to l	ate charges of	1.5% per mon	th for any i	y invoices r	ot paid w	ithin 30 day	Į ķ	E	MDD/M	2	(1)		- - -	LL-Q-020rey	F-ALL-Q-020rev.07, 15-May-2007	

Sample Condition Upon Receipt

Pace Analytical	1000 Riverbend, Bivd., Suite F St. Rose, LA 70087	Project #	# : 20
Courier: Pace Courier	☐ Hired Courier	□ UPS □ DHL	□ USPS □ Customer □ Other
Custody Seal on Cooler/Box Pr	resent: [see COC]		Custody Seals intact: ☐ es ☐ No
Therm Fi Used: □ Therm Fi □ Therm Fi	sher IR 6 Type of Ice	e: Wet Blue None	Samples on ice: [see COC]
Cooler Temperature: [see C	COC] Temp should be	above freezing to 6°C	Date and Initials of person examining contents:
Temp must be measured from Ten	nperature blank when present	Comments:	
Temperature Blank Present"?	☐Yes ☐No		
Chain of Custody Present:	YES []No	DN/A 2	
Chain of Custody Complete:		o □n/a 3	
Chain of Custody Relinquished	i:Yes □No	o □n/a 4	
Sampler Name & Signature on	COC: ✓Yes □No	DN/A 5	
Samples Arrived within Hold Ti	me:Yes □No	DN/A 6	
Sufficient Volume:	✓Yes □No	D □N/A 7	
Correct Containers Used:	Yes 🗆 No	DN/A 8	
Filtered vol. Rec. for Diss. tests	Yes 🗆 No	9 ANA 9	·
Sample Labels match COC:	- Yes □No	D N/A 10	
All containers received within nu precautionary and/or expiration		D □N/A 11	
All containers needing chemica been checked (except VOA, co		D □N/A 12	
All containers preservation che compliance with EPA recomme			s preserative added? GYes GNo ecord lot no.: HNO3 H2SO4
Headspace in VOA Vials (>6m	nm): □Yes ☑Ño	□ N/A 14	
Trip Blank Present:	✓ Yes □No	15	
Client Notification/ Resolution Person Contacted:	on:		Date/Time:
Comments/ Resolution:	·····	·	
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APPENDIX E

Calibration Logs



Field Instrument Calibration Records Water Quality Instruments

INSTRUMENT (Make	/Model): YSI 650 MDS	/ YSI 6920
INSTRUMENT #:	F875	R9934
PARAMETER: (Chec	k as applicable)	
X pH	X DO %	
X Cond. ms/cm	□ Temp C	
X Turb. NTU	X ORP mV	
□ DO mg/L		

STANDARDS:

0720

STD NUMBER	ТҮРЕ	STD VALUE	VENDOR/LOT#	DATE STD PURCHASED/ PREPARED/RECEIVED	EXPIRATION DATE
Standard 1	Conductivity	1.413 ms/cm	Pine Environmental		08-31-2017
Standard 2	pН	7.0	Pine Environmental 668 833		05-31-2015
Standard 3	pH	4.0	Pine Environmental 866254		07-31-2018
Standard 4	pH	10.0	Pine Environmental 600105		07-31-2018
Standard 5	ORP	240 mV	Pine Environmental 9674		01-31-2021
Standard 6	Turbidity	0 NTU	Pine Environmental CSFS 316	12-2-16	02-28-2017
Standard 7	Turbidity	126 NTU	Pine Environmental COSS 67		05-31-2017
Standard 8	DO %		303,27		03 31-2011

DATE (yy/mm/dd)	TIME (hr:min)	STD #	INSTRUMENT RESPONSE	CALIBRATED (YES, NO)	INST. RESPONSE AFTER CAL.	Temp (°C)	SAMPLER INITIALS	COMMENTS
08-14-17	0731	1	1.504	Yes	1.413	23.77	MF	
1-18-17	0736	2	700	Yes	7.00	2428	ME	
01-14-17	0741	3	3.87	Yes	4.00	23.86	MR	
01-18-17	0744	4	10.00	Yes	10.00	23.81	WE	
01-18-17	0749	5	241.5	Yes	240.0	24.06	WE	***************************************
01-18-17	0755	Ç	-11.4	Yus	-0.3	23.45-	WE	
01-18-17	0759	7	176.0	Yus	125.9	23.63	045	
01-18-12	0803	8	7.44	Yes	7.40	22.42	MIZ	
						3		

DATE (yy/mm/dd)	TIME (hr:min)	STD #	INSTRUMENT RESPONSE	CALIBRATED (YES, NO)	INST. RESPONSE	Temp (°C)	SAMPLER INITIALS	COMMENTS
(y/mm/du)		"	RESTONSE		AFTER CAL.	(6)		COMMENTS
01-19-17	0815	(01.418	Yes	1.413	22.77	MF	
01-19-17	0820	2	695	465	7.00	2243	MF	
91-19-17	0824	3	4.01	Yus	400	23.09	442	
01-19-17	0829	ч	10.07	Yes	10.01	23.05	MF	×
01-19-17	0F35	5	244.9	Yos	240.0	2312	- WF	
01-19-17	0443	4	-5.3	Yes	-0.3	22.84	ME	
01-19-17	0853	7	129-1	Y's S	125.9	2306	WE	
01-19-17	0809	8	7.89	Yus	7.60	21.25	ME	
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5	15	- 15			- July	A 19-10	70	1/200



Field Instrument Calibration Records Water Quality Instruments

INSTRUMENT (Make/Model):_	VSI GTO MOS /	YSI 6920
INSTRUMENT #:	8875	D9834

PARAMETER: (Check as applicable)

X pH

X DO %

X Cond. ms/cm

 \square Temp C

X Turb. NTU

X ORP mV

□ DO mg/L

STANDARDS:

STD NUMBER	ТУРЕ	STD VALUE	VENDOR/LOT#	DATE STD PURCHASED/ PREPARED/RECEIVED	EXPIRATION DATE
Standard 1	Conductivity	1.413 ms/cm	Pine Environmental	12-05-16	08-31-2017
Standard 2	pH	7.0	Pine Environmental 6CE \$33	12.0716	05-31-2018
Standard 3	pH	4.0	Pine Environmental 666244	12-07-16	07-31-2018
Standard 4	pH	10.0	Pine Environmental 66109	12-07-16	07-31-2018
Standard 5	ORP	240 mV	Pine Environmental 9674	12-07-16	01-31-2021
Standard 6	Turbidity	0 NTU	Pine Environmental CS \$33.	12-07-16	02-28-2017
Standard 7	Turbidity	126 NTU	Pine Environmental Cs \$2,947	12-07-16	08-31-2016
Standard 8	DO % 49/L	7:60			

DATE (yy/mm/dd)	TIME (hr:min)	STD #	INSTRUMENT RESPONSE	CALIBRATED (YES, NO)	INST. RESPONSE AFTER CAL.	Temp (°C)	SAMPLER INITIALS	COMMENTS
121916	0800	1	1.402	Yes	1.414	25-55	MZ	
6-19-15	0805	2	7.05	Yes	7.00	25-67	WP	
12-19-16	0815	3	3.86	Ves	4.00	25:42	WP	
12-15-10	0822	φ	9.93	Yes	9.99	25-72	ME	
12-19-15	UF32	5	224.7	Yes	240.3	25.42	UE	
12-19-14	0844	6	5.2	Yes	0.0	25.44	ME	
12-19-16	UFCO	7	122-5	Yes	126.1	25:53	WIZ	
12-19-14	0857	٤	4.55	2+Y	7.60	25:54	KLZ.	
-								

721 728 1733 734 744 750 755 80) 738 741 746	1 2 3 4 5 4 7 8 1 2	1407 6.94 4.01 10.06 243.7 5.6 119.4 765	tes tes tes tes tes	1.413 7.00 4.00 10.01 240.1 0.0 125.9 7.60	25.78 25.78 25.78 25.78 25.59 25.10 24.35	MP MP MP MP MP MP MP MP	070 0720
734 734 744 750 755 807 738 741	3 4 5 4 7 8 1 2	4.01 10.06 243.7 5.6 119.4 7.65	Yes Yes Yes Yes Yes	4.00 10.01 240.1 0-0 125-9	25.34 25.78 25.69 25.54 25.10	MF MF MF WF WF	
734 744 750 755 80) 738 741	4 5 4 7 8 1 2	10.06 2437 5-6 119.4 7-65	Yes Yes Yes Yes	10.01 240.1 0-0 125-9	25.7° 25.69 25.54 25.10	MP MP WP WP	
744 750 725 80) 738 741	5 4 7 8 1 2	243.7 5.6 119.4 765	Yes Yes Yes	240.1	25.69 25.54 25.10	MP WP WP	
750 755 807 738 741	4 7 5 1 2	5.6 119.4 765	Yes Yes Yes	0.0	25.10	WP WP	
725 60) 738 741 746	7 8 1 2	765	Yes	125.9	25:10	WP	
50) 738 741 746	1 2	765	Yes	· · · · ·	+		
738 741 746	1 2	_		7.60	24.35	MR	
741		1.398	W C				0720
741		1.398	10 0				OTOS
746			160 S	1.413	24-61	W.B	
		7.00	405	7.00	2449	ur	
757	3	4.03	Yos	4.00	2448	WR	
	4	10.04	(65	10-0 (2442	WF	
756	5	239.0	Yes	240.2	24-34	WR	
801	6	3.8	YPS	-0.1	24.38	ME	
806	7	122.6	405	126.1	24.05	ME	
F15	8	7.72	Ves	7.60	23.80	MR	
							0710
719	١	1.395	Yes	1.414	23.75	WE	
423	2	7.01	Yes	7.00	23.97	UP	
728	3	4.03	Yes	4.00	24.00	шъ	
732	4	[0.05	Yes	10.01	23.92	MB	
736	5	241.3	165	240.3	23.85	WB	
742	C	2.1	Vos	00	23.70	Mi²	
747	7	122.3	Yos	125-8	23.63	WP	
4-54	e	7.69	Yes	7.60	23,46	UP	
				- S	-		
17	750						
7777	119 +23 +28 -32 +36 +42 \$4	119 1 1-23 2 1-28 3 1-32 4 1-36 5 1-42 6	119 1 1.395 1-23 2 7.01 1-28 3 4.03 1-32 4 10.05 1-36 5 241.3 1-42 6 2.1 1-42 6 2.1 1-42 6 7.69 1-45	119 1 1.395 Yes 123 2 7.01 Yes 128 3 4.03 Yes 130 5 241.3 Yes 142 6 2.1 Yes 142 6 2.1 Yes 154 6 7.66 Yes	119 1 1.395 Yes 1.414 1-23 2 7.01 Yes 7.00 1-28 3 4.03 Yes 4.00 1-32 4 10.05 Yes 10.01 1-34 5 241.3 Yes 240.3 142 6 2.1 Yes 0.0 17 7 122.3 Yes 125-8 54 6 7.69	119 1 1.395 Yes 1.414 23.75 1-23 2 7.01 Yes 7.00 23.97 1-28 3 4.03 Yes 4.00 24.00 1-32 4 10.05 Yes 10.01 23.92 1-36 5 241.3 Yes 240.3 23.85 1-42 6 2.1 Yes 0.0 23.70 1-7 7 122.3 Yes 7.60 23.76	19 1 1.395 Yes 1.414 23.75 WE 123 2 7.01 Yes 7.00 23.97 WE 128 3 4.03 Yes 4.00 24.00 WE 132 4 10.05 Yes 10.01 23.92 WE 136 5 241.3 Yes 240.3 23.85 WE 147 6 122.3 Yes 125.8 23.63 WE 154 6 7.69 Yes 7.60 23.76 WE



0715

Field Instrument Calibration Records Water Quality Instruments

INSTRUMENT (Ma	ake/Model):_\VSI	5 650	MOS/	VSI 6920
INSTRUMENT #: _	88	\$75 ⁻		29934
PARAMETER: (C)	heck as applicable)			
X pH	X DO %			
X Cond. ms/cm	□ Temp C			
X Turb. NTU	X ORP mV			
□ DO mg/L				

STANDARDS:

STD NUMBER	ТҮРЕ	STD VALUE	VENDOR/LOT#	DATE STD PURCHASED/ PREPARED/RECEIVED	EXPIRATION DATE
Standard 1	Conductivity	1.413 ms/cm	Pine Environmental	12-07-16	08-31-2017
Standard 2	pН	7.0	Pine Environmental (CE 833	12-07-16	05-31-2018
Standard 3	pН	4.0	Pine Environmental 666264	12-07-16	07-31-2018
Standard 4	pН	10.0	Pine Environmental 666109	12-07-16	07-31-2018
Standard 5	ORP	240 mV	Pine Environmental 9474	12-07-16	01-31-2021
Standard 6	Turbidity	0 NTU	Pine Environmental CSF316	12-07-16	02-28-2017
Standard 7	Turbidity	126 NTU	Pine Environmental CS \$2447	12-07-16	08-31-2016
Standard 8	DO % Mg/L	7.60			

DATE (yy/mm/dd)	TIME (hr:min)	STD #	INSTRUMENT RESPONSE	CALIBRATED (YES, NO)	INST. RESPONSE AFTER CAL.	Temp (°C)	SAMPLER INITIALS	COMMENTS
12-27-16	0730	l	1.417	Yes	1.413	26-11	illiz	
12-27-16	0733	2	6.95	Yes	7.00	25.79	MZ	
12-27-16	0737	3	4.11	Yes	4.00	25.90	Wiz	
12-27-16	0742	4	10.15	tos	10.02	2557	Wiz	
12-27-4	0949	S	234.7	Yes	240.1	25.62	UCP-	
12-27-16	0755	6	2.1	445	-0.1	25:48	Miz	
12:27-16	0802	7	121-2	les.	125.4	25-18	ME	
12-27-16	0806	8	7.45	145	7.60	2444	ut	The second second

0718 0724 0732	(1 1601		AFTER CAL.			
	No.	1.406	405	1.414	25/28	шъ	0700
0732	2	6.92	445	7.00	24-17	42	
	3	4.09	Yes	4.00	23.86	me	
0737	4	10.22	Yus	10.03	24.10	WP	
0744	5	244.6	YPS	240.0	2401	MF	
0753	6	38	Yus	-0.1	23.85	miz	1
0757	7	118-4	Yos	126.2	13.47	me	
0800	8	7-79	20g	7.59	23.07	MP	
		.4					0730
0748	1	1.409	405	1.413	24.32	Me	
0752	2	6.92	Yos	700	2435	ME	
0756	3	4.12	Pos	4.00	2442	Me	
0800	4	10.22	445	10.03	2444	we	
0405	5	239.2	Yus	240.1	24.31	me	
0814	6	1.2	Yos	0.0	24.07	1412	1
0821	7	119.2	204	125-8	243	Ke	
0827	8	7.51	Yes	760	24.05	acc	1
							0710
0725	il.	1.400	Res	1.413	2461	MP	
0731	2	6.90	YES	7.00	2491	are	
	3	4.18	Y45	4.00	2483	UF	
0940	φ	10.35	YES	10.05	24.81	MF	
0748	5	238.6	Yos	2400	24.58	147	
0754	6	~2.2	Yes	-0.5	24-40	MP	
0758	7	126.0	Yus	125.9	24.17	MP	V III
0803	8	7.58	Res	7.60	23.67	MP	
				3			
				- 7			
	0753 0757 0800 0488 0752 0756 0800 0800 0816 0827 0725 0731 0735 0740 0748 0758	0753 6 0757 7 0800 8 0757 7 0800 8 0752 2 0756 3 0700 4 0821 7 0827 8 0725 1 0731 2 0735 3 0940 4 0748 5 0758 7	0753 6 38 0757 7 118-4 0800 8 7-79 0752 2 6.92 0756 3 4.12 0800 4 10.22 0814 6 -1.2 0821 7 119.2 0827 8 7.57 0735 3 4.18 0740 4 10.35 0748 5 238.6 0758 7 126.0	0753 6 38 Yes 0757 7 118-4 Yes 0800 8 7-79 Yes 0800 8 7-79 Yes 0800 8 7-79 Yes 0800 9 10.22 Yes 0800 9 10.22 Yes 0800 9 10.22 Yes 0805 5 239.2 Yes 0821 7 119.2 Yes 0827 8 7-57 Yes 0735 3 4.18 Yes 0740 9 10.35 Yes 0740 9 10.35 Yes 0758 7 126.0 Yes	0753 b 38	0753 6 38 Yos -0.1 23.55 0757 7 118.4 Yos 126.2 13.47 0500 8 7-79 Yos 7.69 23.07 0752 2 692 Yos 7.00 24.22 0756 3 4.12 Yos 4.00 24.42 0700 4 10.22 Yos 10.03 24.44 0805 5 239.2 Yos 240.1 24.31 0814 6 -1.2 Yos 0.0 24.02 0821 7 119.2 Yos 125.8 24.6 0827 8 7.57 Yes 7.00 24.05 0735 2 690 Yos 7.00 24.05 0735 3 4.18 Yos 4.00 24.83 0740 4 10.35 Yes 10.05 24.81 0748 5 238.6 Yos 240.0 24.83 0748 5 238.6 Yos 240.0 24.58 0758 7 126.0 Yos 125.6 24.69	0753 b 38 Yos -0.1 23.45 MP 0757 7 118-4 Yos 126-2 13.47 MP 0800 8 7-79 Yos 7-69 23.07 MP 0800 8 7-79 Yos 1.413 24.32 MP 0752 2 6.92 Yos 4.00 24.42 MP 0754 3 4.12 Yos 4.00 24.42 MP 0800 4 10.22 Yos 10.03 24.44 MP 0814 6 -1.2 Yos 0.0 24.02 MP 0821 7 119.2 Yos 125-8 24.6 MP 0827 8 7.57 Yes 7.00 24.01 MP 0735 3 4.18 Yes 4.00 24.61 MP 0740 4 10.35 Yes 4.00 24.83 MP 0740 5 238.6 Yos 24.00 24.83 MP 0754 5 238.6 Yos 24.00 24.58 MP 0758 7 126.0 Yos 24.00 MP



Field Instrument Calibration Records Water Quality Instruments

INSTRUMENT (Make/Model):_	VSI 650 MDS/	YSI 6920
INSTRUMENT #:	8875	29934
PARAMETER: (Check as applic	able)	

THE HILLER. (Check as applica

X pH

X DO %

X Cond. ms/cm

□ Temp C

X Turb. NTU

X ORP mV

□ DO mg/L

STANDARDS:

STD NUMBER	ТҮРЕ	STD VALUE	VENDOR/LOT#	DATE STD PURCHASED/ PREPARED/RECEIVED	EXPIRATION DATE
Standard 1	Conductivity	1.413 ms/cm	Pine Environmental	12-07-16	08-31-2012
Standard 2	pH	7.0	Pine Environmental	12-07-16	05-31-2018
Standard 3	pH	4.0	Pine Environmental	12-07-16	07-31-2015
Standard 4	pH	10.0	Pine Environmental 66016	1207-16	07-31-2018
Standard 5	ORP	240 mV	Pine Environmental 46 74	12-07-14	01-31-2021
Standard 6	Turbidity	0 NTU	Pine Environmental (SPS)		02-28-2017
Standard 7	Turbidity	126 NTU	Pine Environmental (58244)	12-07-16	08-31-2010
Standard 8	DO %				

0710

DATE (yy/mm/dd)	TIME (hr:min)	STD #	INSTRUMENT RESPONSE	CALIBRATED (YES, NO)	INST. RESPONSE AFTER CAL.	Temp (°C)	SAMPLER INITIALS	COMMENTS
01-04-17	0720	1	1404	Yes	1.414	24.52	MP	
01-04-17	0725	2	6.87	Yes	7.00	24.58	WB	
01-04 17	0730	3	417	Yes	4.00	2445	MP	
01-04-17	0736	4	10.36	Yes	10.05	26.32	402	
01-04-17	0745	5	243.6	445	240.0	24.04	ME	
01-04-17	0750	6	7.3	Y45	-0-1	24.08	MF	
01-04-17	0455	7	1121	Yus	124.3	24.02	MP	
01-04-17	0755	8	7.97	Yos	7.40	23.43	WP	
							u2	
							W.C.	
	-							

DATE (yy/mm/dd)	TIME (hr:min)	STD #	INSTRUMENT RESPONSE	CALIBRATED (YES, NO)	INST. RESPONSE AFTER CAL.	Temp (°C)	SAMPLER INITIALS	COMMENTS
01-05-17	0723	1	1.411	Yos	1.414	2400	MP	
01-05-17	0728	2	6.92	KPS	7.00	24.25	MC	
01-05-17	0933	3	4-17	Yes	4.00	2407	M2	
01-05-17	0739	4	(0.33	Y45	10.05	24.06	MP	
01-05-17	0745	5	240.3	Yes	2400	24.00	me	
01-05-17	0752	6	0.2	2+4	0.2	2395	ME	
01-05-17	0757	7	128-6	Yes	125:8	23.68	MP	
01-05-17	0802	8	7.45	Yes	7.60	22.80	HE	
								0720
01-11-17	0741	l	1.413	X=S	1.413	24.25	MP	
21-11-17	0749	2	6.84	Pos	7.00	2415	WF	
0(-11-17	0754	3	4.23	Pos	4.00	24.13	WF	
01-11-17	0802	9	10:47	Y45	10.07	2400	UF	
0(-11-17	0809	5	238.0	Yes	240.0	24.00	WF	
01-11-17	0817	6	2.3	Yus	0.1	23.93	WZ	
01-11-17	0821	7	117.7	Yes	126.0	23:77	WE	
01-11-17	0827	8	7.40	Yus	7.60	23.33	MLS	
								0655
01-17-17	0703	(1.411	Yes	1.414	24.48	MP	
01-17-17	0708	2	695	V45	7.00	2473	MP	
01-17-17	0715	3	4.22	Yrs	400	2424	au2	
01-17-17	0722	4	10.37	Yes	10.05	23 55	412	
01-17-17	0730	S	2364	244	240.1	23.84	MP	
01-17-17	0736	6	11.5	Y=5	0.2	23.71	MP	
01-17-17			113.4	Yus	125.5	23:SF	ME	
01-17-17	0748	8	7.79	Yes	7.40	23.10	WP	
				Tar			1/10	
							-	
							Ļ.	
			1		, _	-	14	



Project/Site	Name:	-	Pano	Tormi	nal		ive	
Project Num	ıber:		ಅರಿತ.	1605B	19049			
SERIAL #: _	43-	3911			PINE INSTRI	UMENT #:	19111	
PARAMETE	ER: (Chec	ck as a	applicable)		/ /	~		
% LEL (E	xplosivity)	□% 0 ₂ □ H	I ₂ S ppm	CO ppm 🛮 VC	OC ppm Other	(Specify)	
STANDARD	S:							
STD NUMBE	R TYPE			STD VALUE	VENDOR/LOT#	DATE ST	D RECEIVED	EXPIRATION DATE
Standard 1			ne Stimulant		E. 400062	, , , , , , , , , , , , , , , , , , ,	DIECEITE	Exp. 2018
Standard 2	Oxyg	gen		15%				in
Standard 3	H ₂ S			20 ppm				
Standard 4	СО			60 ppm	P CHAIL	3.5		
Standard 5	Isobi	itylene	e (VOC)	100 ppm	1 54414	8		Sep 2019
CALIBRAT Important N or at least n	Note! Ins		ent needs cali	ibration if it f	ails the bump tes	st (percent devia	ntion exceeds	acceptable range)
or at teast n	loning.	Hitt Di		% DEV	INST.	INST.	1	
DATE (mm/dd/yy)	TIME (24 hr.)	ST D #	INST. RESPONSE (BUMP TEST)	(FROM CYLINDER LABEL)	CALIBRATION (PASSED, FAILED)	RESPONSE AFTER CAL. (BUMP TEST)	SAMPLER INITIALS	COMMENTS
12/19/16	0800	1	42		Failed	58		
		2	17.5	± <u>10</u> %	7 31100	16.0	A.C.	
		3	1)	± <u>N</u> /0		20	_	
		4	15			60		
		5	100.	± <u>2</u> %	Pass			
12/20/16	0720	1	40		Failer	SK	\\(\)	
		2	160	±_0%	Paries	14,5	MC	
		3	19			20		
		4	59			60		
		5	94	± <u>7</u> %	Tealer	100		
								2111-22
12/21/6	0741	1	34	1	Failed	58	A.C.	
		2	14.4	+100/		15.5	11.00	
		3	16	±10%		20		
		4	65			69		
		5	94.1	± <u>7</u> %		0,001	A-C	



Field Instrument Calibra Air Quality Instruments:

Project/Site	Name:		Par	2 Te	mina			
Project Num	iber:		E002. 1	605 B	NAME OF THE PARTY			
SERIAL #: _		A3	301)		PINE INSTRU	JMENT #:R	19111	
PARAMETI								
□ % LEL (E	xplosivity	·)	□ % O ₂ □ 1	H ₂ S ppm □	CO ppm 🗆 VO	C ppm Other (Specify)	***************************************
STANDARD	S:							
STD NUMBE	D TY/DI	,		STD	VENDOD/LOTA	DATE ST	D DECENTED	EXPIRATION
Standard 1			ne Stimulant	VALUE 58%	P.E. 400062	DATEST	D RECEIVED	DATE
Standard 2	Oxyg		iio Stimulant	15%	112 45061			Exp Jun 2018
Standard 3	H ₂ S			20 ppm				
Standard 4	CO			60 ppm				
Standard 5	Isobi	ıtylen	e (VOC)	100 ppm	PE 544188			SCP 2019
CALIBRAT Important N or at least n	Note! In:		ent needs cal	ibration if it	fails the bump tes		tion exceeds	acceptable range)
DATE	TIME	ST D	INST. RESPONSE	(FROM CYLINDER	CALIBRATION (PASSED,	INST. RESPONSE AFTER CAL.	SAMPLER	
(mm/dd/yy)	(24 hr.)	1	(BUMP TEST)	LABEL)	FAILED)	(BUMP TEST)	INITIALS	COMMENTS
12/24/6	0125	_	29	±1 2 %	Pailed	54	AZ,	
		2	18.6			147		
		3	14			20		
		4	56			60]	
		5	948	±_2%	G226,000	0.00		
				18.00				
12/1/16	014	1	38			58		
		2	17.0		Failed	14.6	A-(
		3	16	±_0%	(20		
		4	55	1		60		
		5		± <u>2</u> %	0-11			
			(00,0		Pass			
12/28/16	0135	1	40	1	1	50		
, ,	0133	2	40	-		58	AC	
,		3	17.6	± <u>10</u> %		14.9		
			18	-	Foiled	70		
		4	54		, , , , ,	60		1
		5	98	± <u>2</u> %	Paile	100.0	AS	



Project/Site	Name:		Puna	torma	7 - 111 to 1 -	II	ir	
Project Nun	nber:	F		50				
SERIAL #: _	Д	3 -	301)		PINE INSTR	UMENT #:	191111	
PARAMETI								
□% LEL (E	explosivity)	□% O ₂ □1	H ₂ S ppm ⊟	€O ppm □ V€	C ppm 🗆 Other	(Specify)	(b)
STANDARD	OS:		CA.	1	10.1			1
STD NUMBE	R TYPE			STD VALUE	VENDOR/LOT#	DATE ST	D RECEIVED	EXPIRATION DATE
Standard 1	LEL	Penta	ne Stimulant	58%	P.E 400062			
Standard 2	Oxyg	gen		15%	26.55.55	`		Exp Jun 2018
Standard 3	H ₂ S CO	200		20 ppm				
Standard 4 Standard 5		itylene	e (VOC)	60 ppm 100 ppm	DE 544188			500 2019
	1	,	, , , , , , , , , , , , , , , , , , , ,	Tr				The said
CALIBRAT					annuar oran a			
		trum	ent needs cal	ibration if it f	fails the bump tes	st (percent devid	ition exceeds	acceptable range)
or at least n	nonthly.			0/ DEV	TNICTE	TRICTE	0.00	
		ST	INST.	% DEV (FROM	INST. CALIBRATION	INST. RESPONSE		
DATE (mm/dd/yy)	TIME (24 hr.)	D #	(BUMP TEST)	CYLINDER LABEL)	(PASSED, FAILED)	AFTER CAL. (BUMP TEST)	SAMPLER INITIALS	COMMENTS
12/29/1	0755	1	42	± <u>0</u> %	13	28 (BOMI 1E31)	Ac	COMMENTS
		2				(4.1		
		-	18			(4.)		
		3	19			20		
		4	60			60		
		5	98	± <u>′2</u> %	F	100		
01/03/19	0800	1	46			58		
		2	15.6		F	14.8	Ac	
		3	20	± <u>0</u> %		20		
		4	58	-		60		
		5	92	± <u>2</u> %	H		-	
,			1/			100.		
01/01/17	Ober	1	ug		T	58	T	
44 4	086	2	49	+	_			
		3	15.9	± <u>)0</u> %	7	141)	Az	
			21			20	-	
		4	57			60		
		5	99.1	±2%	P	1000	1AZ	



Project/Site Name:			Puna	Termin	\sim					
Project Num	ıber:		EDD2.	1605B	SINDAM STATE					
SERIAL #: _		A	3-3011	PINE INSTRUMENT #: R 19 111						
PARAMETI	ER: (Che	ck as a	applicable)	1	, ,					
☐ % LEL (E	xplosivity	')	\square % 0_2 \square \square	I ₂ S ppm □	CO ppm 🗆 VC	OC ppm □ Other	(Specify)			
STANDARD	S:									
STD NUMBE	R TYPE	ž.		STD VALUE	VENDOR/LOT#	DATE STD RECEIVED		EXPIRATION DATE		
Standard 1			ne Stimulant	58%			DRECEIVED			
Standard 2	Oxyg	gen		15%	P. E. 400063	-		Esp		
Standard 3	H ₂ S			20 ppm				Esp Jun 18		
Standard 4	CO		(MOC)	60 ppm	01 011111111111111111111111111111111111	,				
Standard 5	Isobi	itylene	e (VOC)	100 ppm	PE 544185			Sep 19		
CALIBRAT	ION DAT	Γ A :								
			ent needs cali	ibration if it f	ails the bump tes	t (percent devid	ition exceeds	acceptable range)		
or at least m								7		
DATE (mm/dd/yy)	TIME (24 hr.)	ST D #	INST. RESPONSE (BUMP TEST)	% DEV (FROM CYLINDER LABEL)	INST. CALIBRATION (PASSED, FAILED)	INST. RESPONSE AFTER CAL. (BUMP TEST)	SAMPLER INITIALS	COMMENTS		
01/05/17	0240	1	46					COMMENTS		
					P)	58	Ac			
		2	(1)	±10%		14.9	110			
		3	18			20				
		4	51			60				
		5	94.7	±_2%	F	10000]			
							L			
01/11/17	1038	1	45			58				
		2	16		1-	19.1	AC			
		2	18	± <u>10</u> %						
		4	58			20	-			
		5		±2%	6	60	-			
			98		-	00.0				
110			1	7						
01/21/19	0135	1	36			58	_			
		2	16.0	± <u>10</u> %		14,6	Ao			
		3	19	1		ZO				
		4	57		1	60				
		5	100.0	± <u>Z</u> %	P		AC			



Project/Site	Name:		Pin	a Ter	16-1-	115 - 1		
Project Num	ıber:		E007.	1605B				
					PINE INSTRI	UMENT #:R	191111	
PARAMETI						,		
☐ % LEL (E	xplosivity	7)	$\square \% 0_2 \qquad \square 1$	H ₂ S ppm □	CO ppm UVC	OC ppm Other	(Specify)	
STANDARD	S:							
STD NUMBE	R TYPI	E		STD VALUE	VENDOR/LOT#	DATEST	D RECEIVED	EXPIRATION DATE
Standard 1		LEL Pentane Stimulant		58%				
Standard 2	Oxy	gen		15%	6.E 400057			EXO
Standard 3	H ₂ S			20 ppm				Jun 18
Standard 4 Standard 5	CO	itylene	e (VOC)	60 ppm 100 ppm	P. B 544188			Sen 19
			, · · /	FP***	3,,,,,			2001
CALIBRAT					mara wa	to car		
		strum	ent needs cal	ibration if it	fails the bump tes	st (percent devid	tion exceeds	acceptable range)
or at least n	ionthly.	- 10		A/ PEN				
		ST	INST.	% DEV (FROM	INST. CALIBRATION	INST. RESPONSE		
DATE (mm/dd/yy)	TIME (24 hr.)	D #	RESPONSE (BUMP TEST)	CYLINDER LABEL)	(PASSED, FAILED)	AFTER CAL.	SAMPLER	COMMENTS
01/17/17	0800		SG	LABEL	railed)	(BUMP TEST)	INITIALS	COMMENTS
		2			F			
			15,2	± <u>10</u> %	1	14.1	tc	
		3	29			29		
		4	68			60		
		5	100,0	±2_%	Pass			
, ,								
01/18/11	0/30	1	55			58		
	1. 3. 3.	2	14.8			(4.)		
		3		± <u>9</u> %	F			
		4	20	1	,	20 60	AL	
		5	62	±2_%		60	-	
			109.0	12/0	P			
01/19/1	0815	I	54			24		
		2	16.9	1000	E	14.5	A.C	
		3	14	± <u>10</u> %		20		
		4	60			60		
		5	96.4	± <u>7_</u> %	R		N 2	
L		1	13.4			100.0	AZ	

APPENDIX F

Pace Analytical Services Explanation letter



RE: Contestación a requerimientos de límites de la Junta para agua subterránea

A quien pueda interesar:

A continuación respuestas, comentarios y observaciones de Pace Analytical con relación al document Guía de Cierre Permanente para sistemas de tanques de almacenamiento soterrados notificado el 17 de febrero del 2015 y discutidos en reunion llevada a cabo el 24 de marzo del 2015 con Wilmarie Rivera y Juan Osorio de la JCA y nuevamente mencionados en la pasada reunión del 20 de abril del presente año.

- Los límites de rastreo sugeridos para los compuestos que no presentan MCL (nivel máximo de contaminación) de agua subterránea, son para agua potable según lo indica la propia guía (pag 31 iten d), lo que no aplica para muestras de agua subterránea cruda y el método 8270.
- Estos límites se extraen del Reglamento de Calidad de Agua según la guía (pag 31 item f) del año 2010, y hace mención que se obtienen de los estados de Florida y Luisiana los cuales no pertenecen a la region II de EPA como Puerto Rico por lo que Pace solicitó deben ser revisados de todas formas ya que la guía se aprueba el 20 de enero del 2015. Se acordó que basado en éstas y otras discrepancias señaladas, se revisaría el reglamento y que miestras tanto Pace reportaría los los límites validados mas bajos possible.
- Pace presenta en la reunión del 24 de marzo del 2015 un documento (tabla comparativa) alertando a la Junta de que los límites de agua potable requeridos para los compuestos en cuestión (Benzo(a) antraceno, Benzo(a) pireno y Benzo (a) fluoranteno no podían ser alcanzados aún utilizando la tecnología más sofisticada (8270 SIM) para analizar PAH's.
- Se establece que el tipo de muestra de agua subterránea es no tratada y contiene posibles contaminantes y minerales causantes de interferencias, por lo que lograr límites de detección extremadamente bajos con precisión no es posible.

De tener preguntas o dudas a lo expuesto de mi parte en esta minuta, estamos en la major disposición de aclarar las mismas hasta donde nuestra capacidad y conocimiento así lo permita.

Respetues mente:

Juan A. Redondo Diaz

Gerente de Proyectos

Pace Analytical PR SC



Arcadis Caribe, P.S.C.

48 Carr. 165 OFC 401 Guaynabo, Puerto Rico 00968 Tel 787 777 4000 Fax 787 777 8086