Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: BioLabs Chlorine Fire

From: **10/2/24 5:00 PM** ***To:*** **10/3/24 *5:00 AM***

Station 2 - Mammy's							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	923	734	0-135 ppb	62.99 ppb	9000 ppb 8hr avg
	H2S	No	923	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	No	923	0	0-0 ppm	0 ppm	0.5 ppm 1hr avg
SPM Flex	HYDROGEN CHLORIDE (HCL)	No	13803	0	0-0 ppm	0 ppm	1.8 ppm 1hr avg
SPM Flex	PHOSGENE (COCL2)	No	13829	0	0-0 ppb	0 ppb	300 ppb 1hr avg

	Station 5 -Park Circle - Lester Rd						
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	173	0	0-0 ppb	0 ppb	9000 ppb 8hr avg
	H2S	No	648	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	No	648	209	0-0.8 ppm	0.11 ppm	0.5 ppm 1hr avg

Station 8- Iris Drive SW Near Pyro Fireworks							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	695	348	0-1238 ppb	299.10 ppb	9000 ppb 8hr avg
	H2S	No	695	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	No	695	34	0-0.30 ppm	0.01 ppm	0.5 ppm 1hr avg

Station 10 - Gated Community Near Rockdale Plaza Shopping Center						
Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
Data not recorded in reported system. Data being recovered from instrument and will be included in revised report						

Station 11 -Patrick & Associates Inc							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	923	0	0-0 ppb	0 ppb	9000 ppb 8hr avg
	H2S	No	923	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	No	923	3	0-0.40 ppm	0.00 ppm	0.5 ppm 1hr avg
SPM Flex	HYDROGEN CHLORIDE (HCL)	No	13782	434	0-0.20 ppm	0.00 ppm	1.8 ppm 1hr avg
SPM Flex	PHOSGENE (COCL2)	No	13806	0	0-0 ppb	0 ppb	300 ppb 1hr avg

Station 13- Intersection of Old Covington Highway and 3rd Avenue							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE Pro	VOC	No	311	3	0-1718 ppb	7.93 ppb	9000 ppb 8hr avg
	H2S	No	311	0	0-0 ppm	0 ppm	0.51 ppm 1hr avg
	CL2	No	311	130	0-0.40 ppm	0.06 ppm	0.5 ppm 1hr avg

Notes:

% Percent
< Less than
> Greater than
AEGL Acute Exposure Guideline Levels for Airborne Chemicals
C/m Counts (ionization events) per minute
µg/m³ Micrograms per cubic meter
min Minute
PAC Protective Action Criteria
PEL Permissible exposure limit
ppb Parts per billion
ppm Parts per million
PM Particulate matter

Analyte	Definition	Action Level Reference
CL2	Chlorine	AEGL-1 1hr
H2S	Hydrogen Sulfide	AEGL-1 1hr
HYDROGEN CHLORIDE (HCL)	Hydrogen Chloride	AEGL-1 1hr
PHOSGENE (COCL2)	Phosgene ($COCl_2$)	AEGL-2 1hr
VOC	Volatile Organic Compounds	AEGL-1 8hr

Air Monitoring Summary Tables – Review

Project Name: **Bio Lab Chlorine**

The EPA uses air monitoring instruments with real-time alerts to track air quality during an emergency response. This air monitoring summary table report is used by EPA and local responders to review the thousands of measurements that can be collected in a single day.

The number of readings per instrument during this period may be reduced due to communications issues with the equipment or because some instruments were moved to a new station in response to changing wind conditions.

The following is a review of station results for the time period from 5:00pm on 10/2/2024 to 5:00am on 10/2/2024:

- **Station 2:** No issues observed.
- **Station 5:** Communications with the instrument were lost from 11:00pm to 2:45am. When communications were established, the instrument reported a Cl2 concentration of 0.8ppm; measured concentrations fell to 0.3ppm after this time; the measured 1hour average did not exceed 0.46ppm.
- **Station 8:** No issues observed.
- **Station 10:** Data from this station were not recorded in the reporting system. Data are being recovered from the instrument and will be included in a revised report.
- **Station 11:** No issues observed

Air Monitoring Summary Tables – Explanation of Tables

Project Name: **Bio Lab Chlorine**

The following information is provided in each report:

- **Station** – at the top of each table is a name and location for each air monitoring station. These are mobile stations that may change over time and new station numbers are established. Previously used station numbers will not appear on this report.
- **Instrument** – this is the model of instrument being used to measure the air. Some stations may use multiple instruments, and some instruments may measure multiple things at once
- **Analyte** – these are the chemicals or other compounds that the instrument is measuring:
  - **VOC**: Volatile Organic Compounds; this is not a specific chemical but includes a long list of possible chemicals, many of which have strong odors
  - **CO**: Carbon Monoxide; this compound is commonly associated with combustion (i.e. fires)
  - **H2S**: Hydrogen Sulfide; this is a default sensor for the instrument and is used for industrial safety
  - **LEL**: Lower-Explosive Limit; this is a default sensor for the instrument and is used for industrial safety
  - **O2**: Oxygen; this is a default sensor for the instrument and is used for industrial safety
  - **Cl2**: Chlorine; chlorine gas is an inhalation hazard with a pungent suffocating odor and is a contaminant of concern for the site
  - **HCl:** Hydrogen Chloride; a corrosive gas with a sharp, pungent odor and is a contaminant of concern for the site
  - **COCl2:** Phosgene; a potential combustion product that EPA monitors for at chemical and industrial fires
- **Action Level Exceedance** – is an easy-to-read determination whether one of the Action Levels in the column on the right ***may have*** been exceeded. The action levels are based on *averages over time* but this column may say "Yes" whenever a single measurement exceeds that number. This helps responders assess whether further protective measures are needed.
- **Number of Readings** – the number of measurements collected by the sensor, usually collected once every second or every minute.
- **Number of Detections** – the number of measurements greater than zero
- **Concentration Range** – the minimum and maximum measurement that was collected
- **Period Average** – the average measurement for the entire collection period
- **Action Levels** – based on the most protective AEGLs (Acute Exposure Guideline Levels) which are used by emergency responders when dealing with chemical spills or other exposures and describe the human health effects from once-in-a-lifetime, or rare, exposure to airborne chemicals. Further information is available at EPA.gov/AEGL.