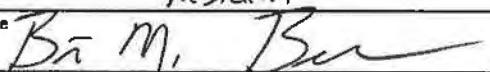
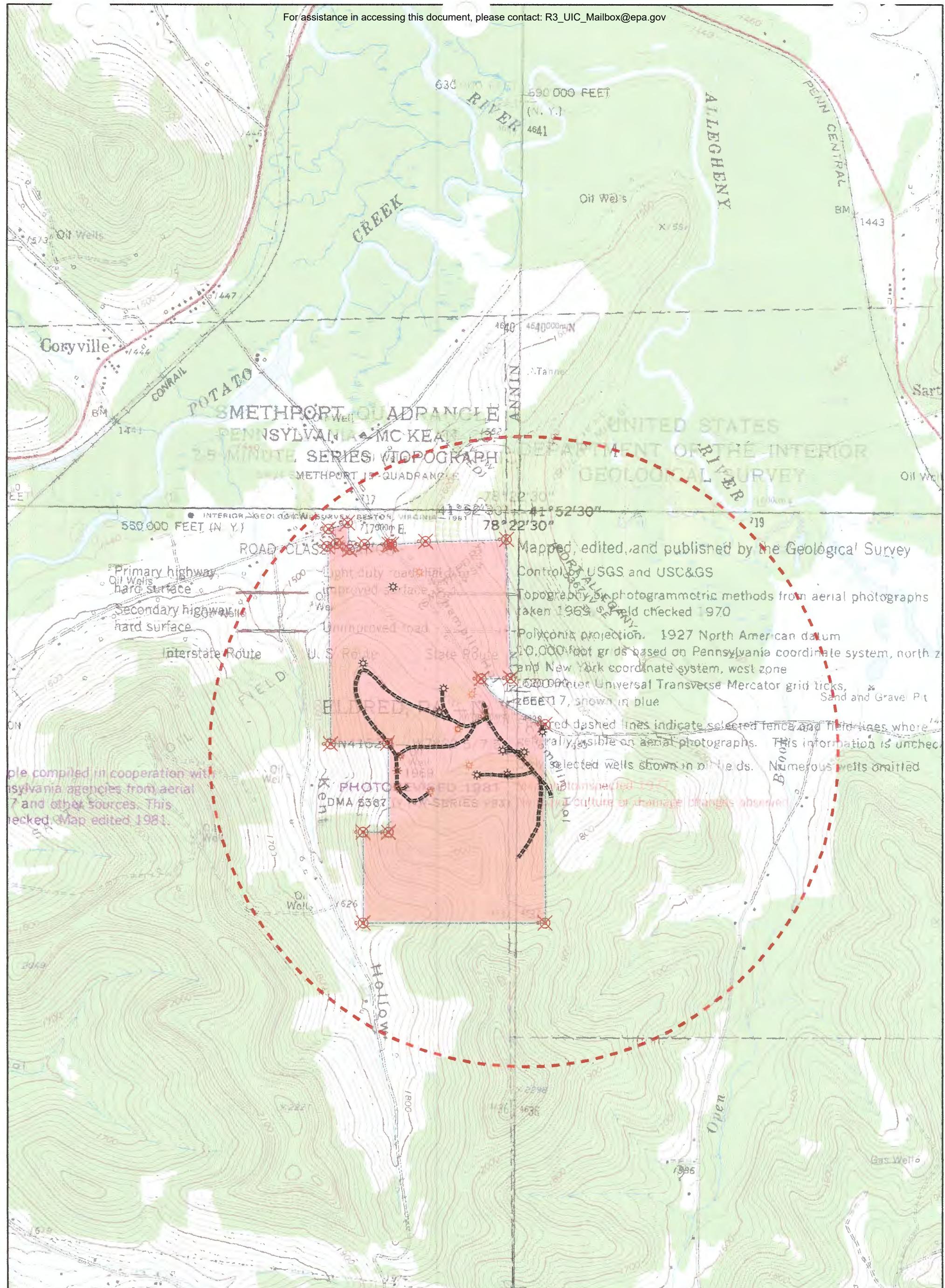


United States Environmental Protection Agency Underground Injection Control Permit Application (Collected under the authority of the Safe Drinking Water Act, Sections 1421, 1422, 40 CFR 144)												I. EPA ID Number		T/A		C			
Read Attached Instructions Before Starting For Official Use Only																			
Application approved mo day year			Date received mo day year			Permit Number			Well ID			FINDS Number							
II. Owner Name and Address												III. Operator Name and Address							
Owner Name Benson Energy, LLC												Owner Name Brice Benson							
Street Address 772 Champlin Hill Rd						Phone Number (814) 887-5060			Street Address 772 Champlin Hill Rd						Phone Number (814) 887-5060				
City Smethport			State PA			ZIP CODE 16749			City Smethport			State PA			ZIP CODE 16749				
IV. Commercial Facility			V. Ownership			VI. Legal Contact			VII. SIC Codes										
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			<input checked="" type="checkbox"/> Private <input type="checkbox"/> Federal <input type="checkbox"/> Other			<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator													
VIII. Well Status (Mark "x")																			
<input checked="" type="checkbox"/> A <small>Operating</small>		Date Started mo day year			<input checked="" type="checkbox"/> B. Modification/Conversion <small>01/05/2011</small>			<input type="checkbox"/> C. Proposed											
IX. Type of Permit Requested (Mark "x" and specify if required)																			
<input checked="" type="checkbox"/> A. Individual <input type="checkbox"/> B. Area				Number of Existing Wells			Number of Proposed Wells			Name(s) of field(s) or project(s)									
X. Class and Type of Well (see reverse)																			
A. Class(es) (enter code(s))		B. Type(s) (enter code(s))		C. If class is "other" or type is code 'x,' explain									D. Number of wells per type (if area permit)						
Class II		D											(1) Class II 0						
XI. Location of Well(s) or Approximate Center of Field or Project																XII. Indian Lands (Mark 'x')			
Latitude			Longitude			Township and Range												<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Deg 41	Min 51	Sec 49.9	Deg 78	Min 22	Sec 27.3	Sec	Twp	Range	1/4 Sec	Feet From	Line	Feet From	Line						
XIII. Attachments																			
(Complete the following questions on a separate sheet(s) and number accordingly; see Instructions)																			
For Classes I, II, III, (and other classes) complete and submit on a separate sheet(s) Attachments A-U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application.																			
XIV. Certification																			
I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)																			
A. Name and Title (Type or Print) Brice Benson												B. Phone No. (Area Code and No.) 814 887-2892							
C. Signature 												D. Date Signed 1-11-14							



Benson Energy, LLC

772 Chaplin Hill Rd.
Smethport, PA 16749

Henderson Resource Group LLC

Date: November 12, 2013
Drawn By: M. Henderson

May Number 4, 1973. Page 66 - 118

Legend

- Pre 1985 Wells
- Post 1985 Wells
- Corners
- ===== Lease Road
-  1 Mile Buffer
-  Property Boundary

Property Information

USGS: Smethport & Port Alleghany
Township: Annin
County: McKean
Acreage: 436.3

0 750 1,500 3,000

ANSWER

Scale: 1" = 1500'



Benson Energy, LLC

772 Chaplin Hill Rd.
Smethport, PA 16749

Henderson Resource Group LLC

Date: November 12, 2013
Drawn By: M. Henderson

Map Name: 1-Mile Buffer Limit

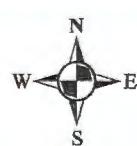
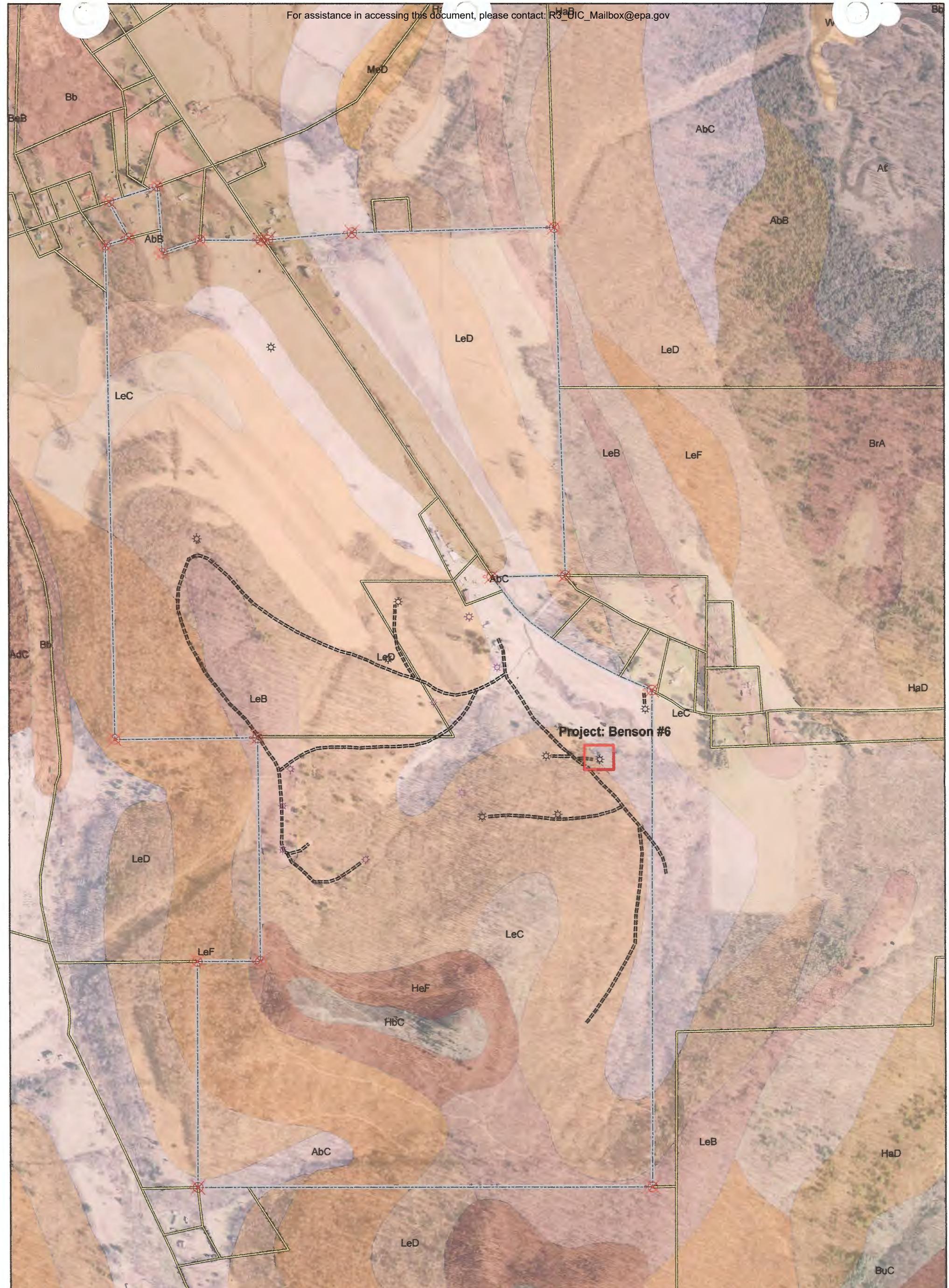
Legend

- Pre 1985 Wells
- Post 1985 Wells
- Lease Road
- 1 Mile Buffer
- Property Boundary

Property Information

USGS: Smethport & Port Alleghany
Township: Annin
County: McKean
Acreage: 436.3

0 750 1,500 3,000
Feet
Scale: 1" = 1500'



Benson Energy, LLC

772 Chaplin Hill Rd.
Smethport, PA 16749

Henderson Resource Group LLC

Date: November 12, 2013
Drawn By: M. Henderson

Map Name: McKean County Soil Data

Legend

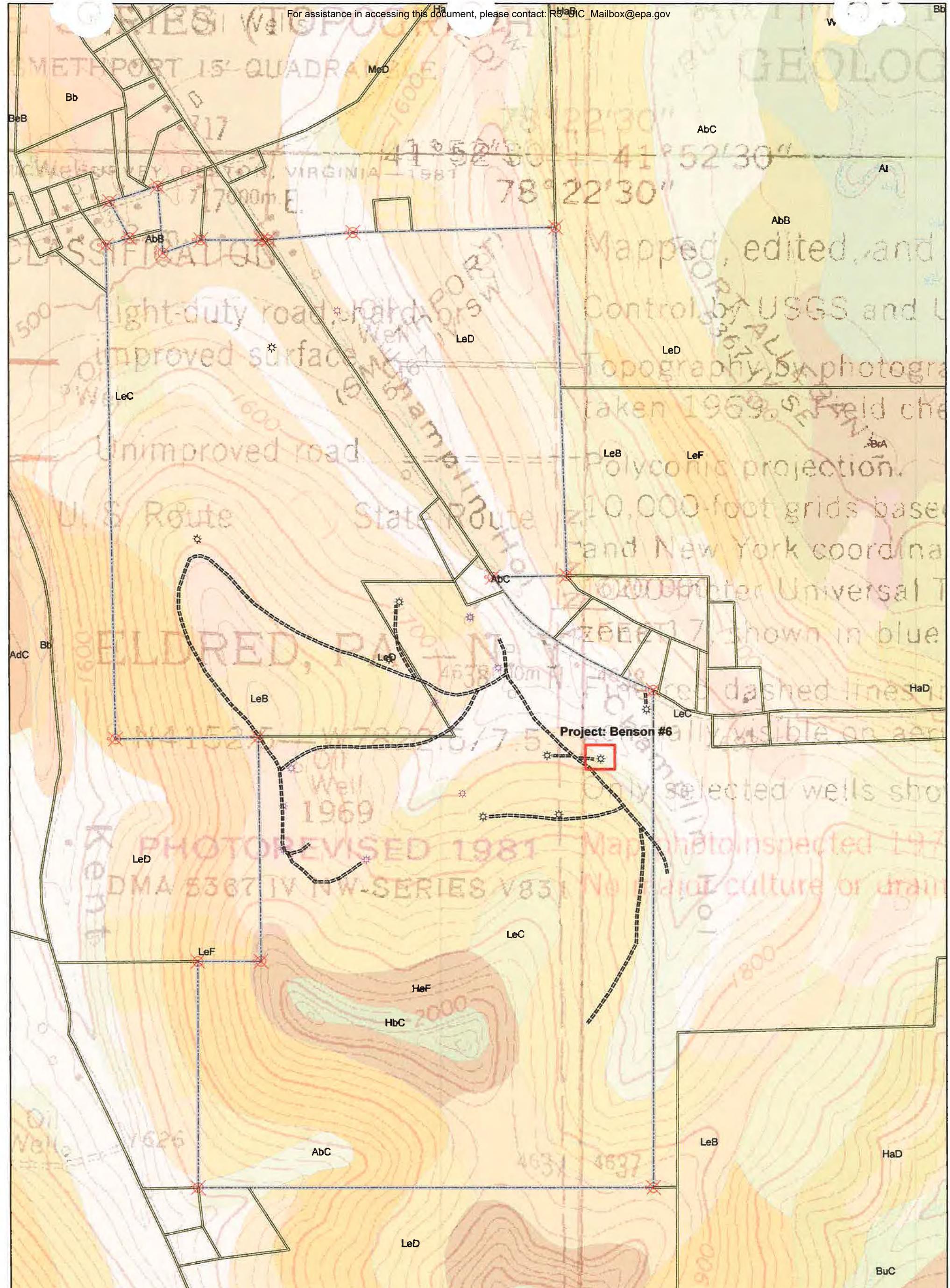
- Pre 1985 Wells
- Post 1985 Wells
- Corners
- Lease Road
- Property Boundary

Property Information

USGS: Smethport & Port Alleghany
Township: Annin
County: McKean
Acreage: 436.3

0 300 600 1,200

Scale: 1" = 600'



Benson Energy, LLC

772 Chaplin Hill Rd.
Smethport, PA 16749

Henderson Resource Group LLC

Date: November 12, 2013
Drawn By: M. Henderson

Map Name: McKean County Soil Data

Legend

- Pre 1985 Wells
- Post 1985 Wells
- Corners
- Lease Road
- Property Boundary

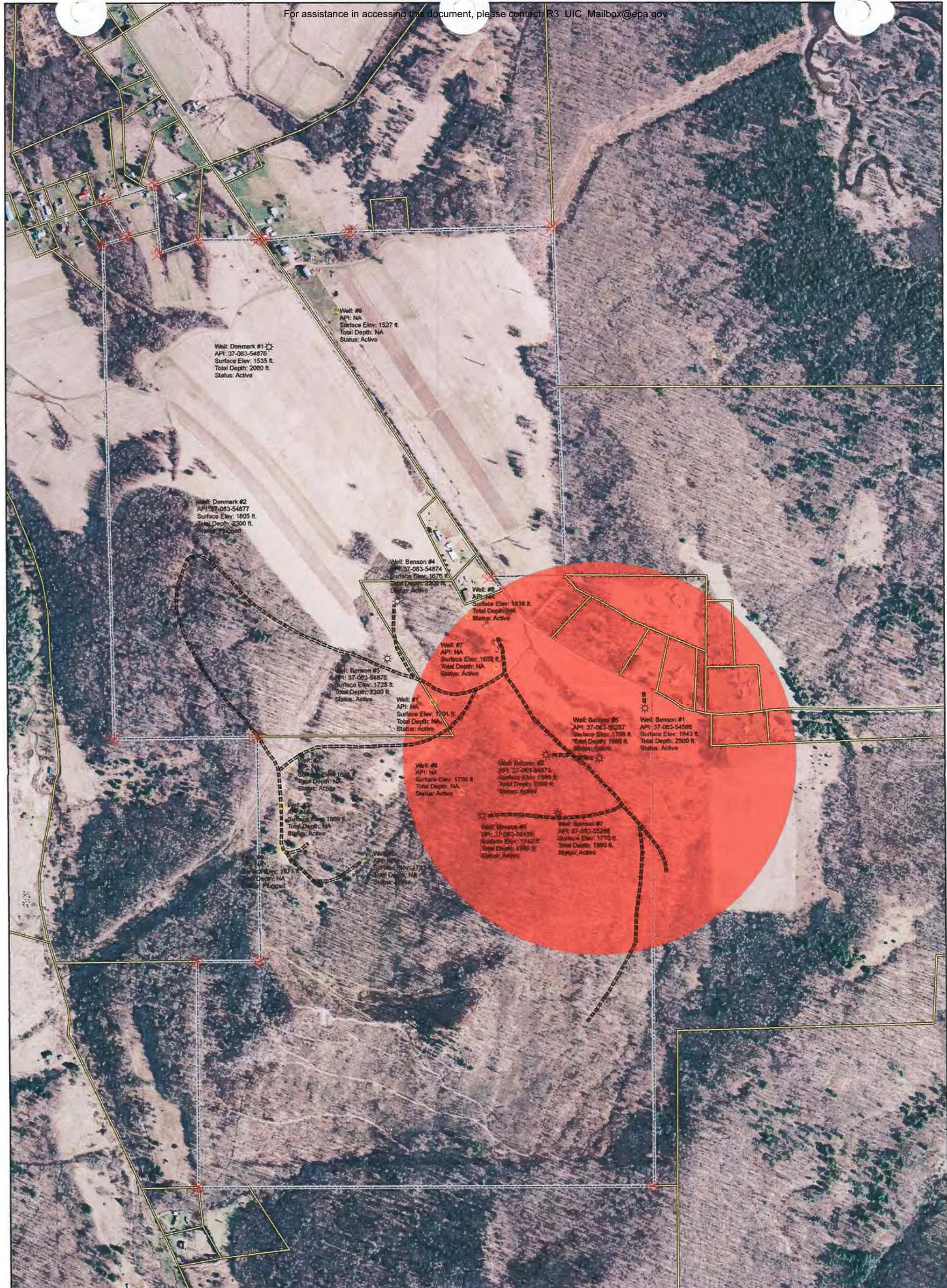
Property Information

USGS: Smethport & Port Alleghany
Township: Annin
County: McKean
Acreage: 436.3

0 300 600 1,200

Feet

Scale: 1" = 600'



Benson Energy, LLC

772 Chaplin Hill Rd.
Smethport, PA 16749

Henderson Resource Group LLC

Date: November 12, 2013

Drawn By: M. Henderson

Map Name: Area of Review (Aerial)
Existing Producing Wells

Legend

- Pre 1985 Wells
- Post 1985 Wells
- Corners
- Lease Road
- 1/4 Mile AOR
- Property Boundary

Property Information

USGS: Smethport & Port Alleghany
Township: Annin
County: McKean
Acreage: 436.3

0 300 600 1,200

Scale: 1" = 600'

2013

Class II Underground Injection Control Permit for Benson Oil Company

Lease Address:

Benson Oil Company
772 Chaplin Hill Rd.
Smethport, PA 16740
Keating Township



Prepared For:

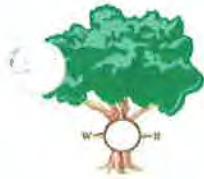
Benson Oil Company
772 Chaplin Hill Road
Smethport, PA 16740

By:

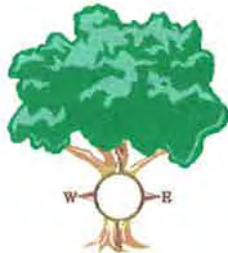
Henderson Resource Group
121 Dewey Ave.
Hazel Hurst, PA 16733

Phone: (814) 778-5628

October 24, 2013



Henderson Resource Group LLC



Henderson Resource Group LLC

MINERAL OWNERSHIP SUMMARY

Surface Owner: V. Benson

Subsurface Owner: Benson Energy, LLC

Mineral Address: 772 ~~Chaplin~~ Hill Rd.
Smethport, PA 16740

County: McKean

Municipality: Annin Township

USGS Topo Map: Smethport & Port Allegheny

Open Waterways:

<u>Stream Name</u>	<u>Stream Classification</u>
Chaplin Hollow Creek	CWF

Distance from Injection Well to Stream: 169 ft.

Designated Watershed: ~~Chaplin Hollow~~
Chaplin

USDW Locations in Review Area:

<u>Owner</u>	<u>Latitude</u>	<u>Longitude</u>
R. Ford	41 52' 03.96"N	78 22' 42.97"W
V. Benson	41 51' 57.70"N	78 22' 38.57"W
W. Shea	41 51' 55.25"N	78 22' 21.03"W
J. Renner	41 51' 54.34"N	78 22' 15.26"W
K. Shatley	41 51' 52.21"N	78 22' 15.78"W
D. Leet	41 51' 52.17"N	78 22' 12.61"W
B. Schwartz	41 52' 00.80"N	78 22' 21.34"W

Coordinate Datum: NAD 27

Average Depth of Wells: 115 ft.

Directions to Lease: Starting from the intersection of US Rte. 46 and Chaplin Hill Rd. The lease entrance is approximately 1.5 miles on the right of Chaplin Hill Rd., a green metal building and log cabin can be seen from the road. The entrance is not gated.

Lease Description

The Benson Energy, LLC is both the surface and subsurface owner for approximately fifty-three percent (53%) of the mineral ownership located at 772 Chaplin Hill Rd. in Smethport, Pennsylvania. The other forty-seven percent (47%) of surface ownership is divided into another three landowners, with approximately forty-three percent (43%) owned by W. Tanner. The mineral property is located on the north eastern corner of the Smethport and north western corner of the Port Alleghany 7 1/2 USGS Topographical Maps. The mineral property is approximately 436.3 acres in size.

Physical Features – The well locations for the mineral property are located on a northeastern facing slope that range for 2 to 25%. The property consists of 128 acres of cultivated fields (29%), 8 acres of residential lawns (1%), and 300 acres of forest cover (70%).

Soils – According to the McKean County Soil Survey, the mineral property contains the following soil types.

<u>Soil Abbreviation</u>	<u>% of Property</u>
AbB	7%
AbC	13%
LeB	8%
LeD	42%
LeC	5%
LeF	9%
HbC	8%
HeF	1%

More information concerning these soil types can be found in Appendix A of this document, or Appendix E to view the soil map for this area. Data gathered from the McKean County Soil Survey.

Open Waterways – There is one Cold Water Fisheries (CWF) stream that runs through the middle of the property that is named Chaplin Hill Creek, which flows into Potato Creek 1.3 miles to the north of the property. A segment of Chaplin Hill Creek flows approximately 169 ft. from the injection well. There is also a 1/3 acre pond located at the entrance of the mineral property, and is approximately 1,170 ft. from the injection well location.

Business Description

Benson Energy, LLC is a family owned Limited Liability Company that produces crude oil and natural gas from privately owned mineral lands, or from lease lands owned by other people or corporations. Crude oil is stored within steel tanks until it is trucked to a local refinery.

Project Description

Benson Energy, LLC requests approval for a Class II Underground Injection Control Permit from Environmental Protection Agency (EPA) and the Pennsylvania Department of Environmental Protection for enhance oil recovery. Benson Energy, LLC plans to convert an existing producer well (Benson #6 API: 37-083-55287) into an injection well for enhance oil recovery using surrounding wells. Brine Water will be injected into the Bradford 3rd Sandstone formation, and will be supplied by normal well operations conducted on the lease. No outside source of contaminated water will be used for this operation. Should insufficient Brine Water be available, Benson Energy, LLC can use clean water from a water well onsite, to offset the lack of production water.



Stimulation Program – The Benson lease maintains an active drilling program that utilizes hydraulic fracturing to stimulate producing wells. Sandstone formations within the well are treated at about 2,800 to 3,200 psi, and the number of treatments is determined by the number of formations and the thickness of those formations. A combine use of brine and fresh water is utilized during the fracturing operation, which is combined with gels and sand to maintain the fractures within the targeted formation. The gel used is determined by the contractor who is performing the frac operation.

Injection Procedures – The utilization of the injection well for the purposes of oil recovery will be during normal working hours of the operator for the lease. This operation will be supervised at all times by the lease operator. Benson Energy, LLC already owns a FMC L09 Piston pump, which will be the primary pump for this operation, has a maximum pressure of 1,200 psi and a maximum flow rate of 29 GPM.

Maximum Production Rates for Equipment:

Maximum Allowable Surface Pressure (psi): 965
Maximum Flow Rate (GPM): 29
Maximum Water Dailey Usage (Gallons): 13,920
Maximum Water Dailey Usage (Barrels): 331
Maximum Fracture Gradient: 0.8 psi/ft

Operating Production Rates for Equipment:

Operating Pressure (PSI): 800
Operating Flow Rate (GPM): 10.5
Operating Water Dailey Usage (Gallons): 5,040
Operating Water Dailey Usage (Barrels): 120
Specific Gravity of Fluid: 1.11
Operating Bottom Hole Pressure (psi): 875
Operating Fracture Gradient (psi/ft): 0.67

**Operating Rates are based on HP and RPM rate capabilities of the motor installed with the pump.*

A 210 Barrel double walled steel tank will be placed on the well site within an earthen containment berm with a 30-mil pit liner providing spill containment. Pea Gravel will provide cover for the pit liner and establish a level surface for the tank to rest.

Construction Procedures – During the construction of the Benson #6 (API: 37-083-55287) well, 7" casing was installed to a depth of 452 feet, and cemented to isolate all USDW aquifers. According to the well log, dated January 20, 2011 performed by Penn Gold, the deepest USDW is at 440 feet. Department of Environmental Protection records show, that as of October 18, 2013, zero pollutants have been recorded within the USDW zones during the two years this well has been in operation.

Benson #6 (API: 37-083-55287) Well Details

USGS 7 1/2 Quad: Port Allegheny

Latitude: 41 51' 49.90" N

Longitude: 78 22' 27.30" W

Elevation: 1,756 ft.

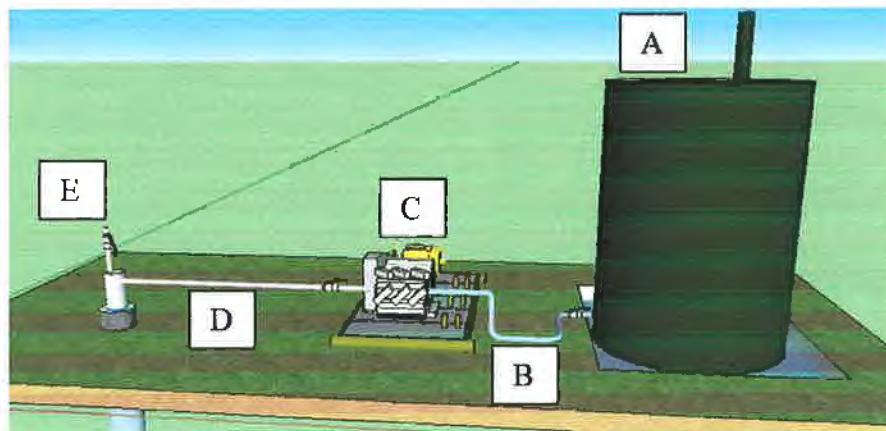
Well Depth (TD): 1,996.6 ft.

Surface Casing Size: 7"

Surface Casing Depth: 452'

Status: Active Oil Producer

Benson Energy, LLC plans to convert this producer well into an injection well for enhance recovery of oil. Benson Energy, LLC will plug the well back to Bradford 3rd Formation at 1,350', then install 4 1/2" pipe to serve as the long string casing, 1 1/2" pipe for the injection tubing, and a packer to seal the formation zone. Cement will also be used to seal the area between bore hole and 4 1/2" casing string. Approximately forty-five (45) feet of limestone will serve as the confining zone from the depth of 1,250 to 1,300 feet.



Site Schematic:

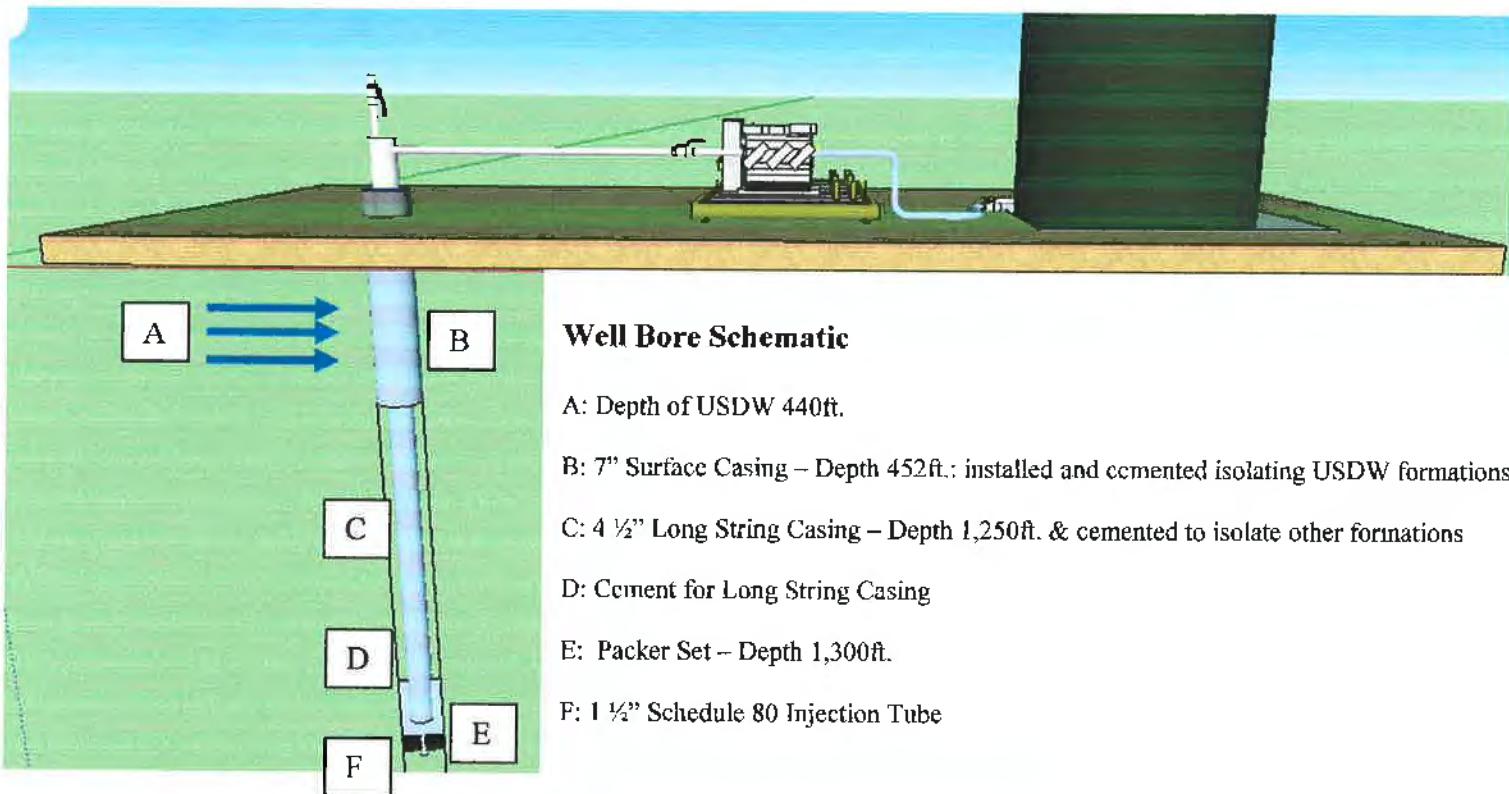
A: 210 Barrel Double Wall Steel Storage Tank in 2 ft. containment.

B: 2" Suction Line from storage tank to pump.

C: FMC Pump & Motor mounted on movable skid with operation controls.

D: 1 1/2" Schedule 80 Injection Pipe.

E: Injection Well Head.



Maintenance and Monitoring Well Activities

Maintenance Program – The enhanced recovery program will only operate during working hours of the lease operator. Fluid levels are checked each morning to ensure the safety of the pump. Clean water can be added to the mixture of production water should inefficient amount of fluid be available for the operation. Operator is responsible for checking over the system for damage, and implementing the necessary repairs.

Monitoring Program – A monitoring well will be drilled, with a depth of 150 ft., and provide Benson Energy, LLC with baseline data concerning USDW's within the Area of Review (AOR) and serve to monitor water aquifers in the area of concern. Water quality data will be collected from the monitoring well before activating the enhance recovery system. This data will be compared to other tests taken once the system is activated to check for changes in existing minerals or the addition of pollutants. Baseline data for all existing drinking water supplies within the AOR can be found in Appendix B.

Well Failure Procedure – Once a report or complaint is received, cease injection operations immediately, and notify the Pennsylvania Department of Environmental Protection in Meadville, PA and the Environmental Protection Agency in Pittsburgh, PA to assist in investigating this claim or report. Producer Wells will continue to operate, but injection operations will be suspended, until Benson Energy, LLC gains approval from all regulating agencies to continue operation.

Plugging and Abandonment Plan

Should a problem occur with the well, where it is determined by the Pennsylvania DEP and EPA that enhance recovery operations should cease and the well is to be abandoned, then the following plan should be implemented.

- Remove injection tubing and 4 ½" casing from the well bore.
- Insert cement plugs at producing zones indicated by the well log developed by Penn Gold on January 20, 2011.
- Insert Top Hole plug by starting the cement at a depth of 500' and continue to cement until it circulates to the top of the bore hole.
- Leave cement string in place and attached identification tag to pipe with well name and API number for the well. This will be left in place as a permanent marker for the plugged well.

Formation Description & Testing

Formation Data – The proposed well is an already existing producing well, which Benson Energy, LLC plans to convert into a Class II Injection well. This well has already been treated using hydraulic fracturing practices. This would affect any core samples collected at this date for porosity and permeability. The formation fractured at approximately 3,120 psi and treated around 2,350 psi. Approximately one hundred (100) sacks of sand were used during the treatment, to assist in maintaining the fractures within the formation.

Treated Formations Within Well

Bradford 1 st Formation	Depth: 703 ft.
Tiona Formation	Depth: 974 ft.
Bradford 2 nd Formation	Depth: 1,033 ft.
Bradford 3 rd Formation	Depth: 1,335 ft.
Lewis Run Formation	Depth: 1,475 ft.
Kane Formation	Depth: 1,644 ft.
Sartwell Formation	Depth: 1,723 ft.
Haskell Formation	Depth: 1,836 ft.

Formation Characteristics

Targeted Formation: Bradford 3rd Sandstone
Formation Depth: 1,300 to 1,350 feet
Sandstone Thickness: 23 feet
Average Porosity for Formation: 10.2%
Confinement Zone Thickness: 45 feet

Formation Test – Should the Pennsylvania Department of Environmental Protection determine a formation test is required for the UIC Class II Permit. Benson Energy, LLC plans to perform a detailed one foot fluorescence sample analysis, to confirm favorable reservoir characteristics of the Benson #6 well, by testing a newer well in the area before a hydraulic fracture treatment is applied. The fluorescence analysis involves measuring the four sandstone reservoir characteristics, which are described below.

Natural Fluorescence – This is the percentage of sandstone sample chips that fluoresce under ultra-violet light scaled from 0 to 100%. A qualitative interpretation of natural fluorescence from 60 to 100% indicates net producible sandstone. Benson Energy, LLC expects the Bradford 3rd Formation to exhibit 60% or greater natural fluorescence for at least fifteen (15) feet of the twenty-three (23) foot formation.

Fluorescence Intensity – This is the sample fluorescence color measured; light, medium, bright, and very bright. The more mobile oil is, will be represented by a brighter color, and the less mobile oil will be, is represented by a pale color. A qualitative interpretation of the fluorescence intensity from bright to very bright indicates more mobile producible sandstone.

Solvent Cut Fluorescence Rate – This is the permeability indicator in which a solvent acts as a leaching agent on representative sample chips per one (1) foot intervals. The leaching (oil streamer or oil halo) rate is recorded in seconds from slow (11 – 13 seconds) to instant (1 – 2 seconds). Higher solvent cut fluorescence rates are indicative of higher permeability zones within the sandstone section. Instant cut rates are indicative of very high permeability sandstone capable of waterflood completion.

Solvent Cut Oil Saturation – This is the amount of oil that the solvent leached from representative samples. The amount is relatively measured (very light, light, medium, heavy, very heavy). The amount is indicative of true oil saturation per one (1) foot intervals. Oil saturations of heavy to very heavy are indicative of sandstones that are capable of waterflood production.

Mechanical Integrity Test (MIT) – The Mechanical Integrity Test (MIT) will be conducted by representatives of Benson Energy, LLC. An Open Annulus test will be performed on the injection well by Benson Energy, LLC, and any new injection well to be constructed in the future, using freshwater to detect leaks in the injection tubing by monitoring changes in water levels.

APPENDIX A

Soil Data Information

McKean County, Pennsylvania

AbB—Albrights silt loam, 3 to 8 percent slopes

Map Unit Setting

- Elevation: 500 to 1,500 feet
- Mean annual precipitation: 35 to 51 inches
- Mean annual air temperature: 41 to 62 degrees F
- Frost-free period: 115 to 165 days

Map Unit Composition

- Albrights and similar soils: 85 percent
- Minor components: 5 percent

Description of Albrights

Setting

- Landform: Mountain slopes
- Landform position (two-dimensional): Footslope
- Landform position (three-dimensional): Mountainbase
- Down-slope shape: Concave
- Across-slope shape: Concave
- Parent material: Residuum weathered from acid, red siltstone, sandstone, and shale

Properties and qualities

- Slope: 3 to 8 percent
- Depth to restrictive feature: 18 to 32 inches to fragipan
- Drainage class: Moderately well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
- Depth to water table: About 12 to 30 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Very low (about 2.7 inches)

Interpretive groups

- Farmland classification: All areas are prime farmland
- Land capability (nonirrigated): 2e
- Hydrologic Soil Group: C

Typical profile

- 0 to 8 inches: Silt loam
- 8 to 19 inches: Gravelly silt loam
- 19 to 70 inches: Channery clay loam

Minor Components

Brinkerton

- Percent of map unit: 5 percent
- Landform: Hillslopes
- Landform position (two-dimensional): Toeslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Concave

McKean County, Pennsylvania

AbC—Albrights silt loam, 8 to 15 percent slopes

Map Unit Setting

- Elevation: 500 to 1,500 feet
- Mean annual precipitation: 35 to 51 inches
- Mean annual air temperature: 41 to 62 degrees F
- Frost-free period: 115 to 165 days

Map Unit Composition

- Albrights and similar soils: 85 percent
- Minor components: 3 percent

Description of Albrights

Setting

- Landform: Mountain slopes
- Landform position (two-dimensional): Foothope
- Landform position (three-dimensional): Mountainbase
- Down-slope shape: Concave
- Across-slope shape: Concave
- Parent material: Residuum weathered from acid, red siltstone, sandstone, and shale

Properties and qualities

- Slope: 8 to 15 percent
- Depth to restrictive feature: 18 to 32 inches to fragipan
- Drainage class: Moderately well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
- Depth to water table: About 12 to 30 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Very low (about 2.7 inches)

Interpretive groups

- Farmland classification: Farmland of statewide importance
- Land capability (nonirrigated): 3e
- Hydrologic Soil Group: C

Typical profile

- 0 to 8 inches: Silt loam
- 8 to 19 inches: Gravelly silt loam
- 19 to 70 inches: Channery clay loam

Minor Components

Brinkerton

- Percent of map unit: 3 percent
- Landform: Hillslopes
- Landform position (two-dimensional): Toeslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Concave

McKean County, Pennsylvania

LeB—Leck Kill channery silt loam, 3 to 8 percent slopes

Map Unit Setting

- Elevation: 500 to 1,500 feet
- Mean annual precipitation: 35 to 51 inches
- Mean annual air temperature: 46 to 55 degrees F
- Frost-free period: 115 to 165 days

Map Unit Composition

- Leck kill and similar soils: 95 percent

Description of Leck Kill

Setting

- Landform: Hills
- Landform position (two-dimensional): Backslope
- Landform position (three-dimensional): Side slope
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Residuum weathered from sandstone and shale

Properties and qualities

- Slope: 3 to 8 percent
- Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Low (about 4.8 inches)

Interpretive groups

- Farmland classification: All areas are prime farmland
- Land capability (nonirrigated): 2e
- Hydrologic Soil Group: B

Typical profile

- 0 to 6 inches: Channery silt loam
- 6 to 26 inches: Channery silt loam
- 26 to 44 inches: Extremely channery silt loam
- 44 to 48 inches: Weathered bedrock

McKean County, Pennsylvania

LeC—Leck Kill channery silt loam, 8 to 15 percent slopes

Map Unit Setting

- Elevation: 500 to 1,500 feet
- Mean annual precipitation: 35 to 51 inches
- Mean annual air temperature: 46 to 55 degrees F
- Frost-free period: 115 to 165 days

Map Unit Composition

- Leck kill and similar soils: 95 percent

Description of Leck Kill

Setting

- Landform: Hills
- Landform position (two-dimensional): Backslope
- Landform position (three-dimensional): Side slope
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Residuum weathered from sandstone and shale

Properties and qualities

- Slope: 8 to 15 percent
- Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Low (about 4.8 inches)

Interpretive groups

- Farmland classification: Farmland of statewide importance
- Land capability (nonirrigated): 3e
- Hydrologic Soil Group: B

Typical profile

- 0 to 6 inches: Channery silt loam
- 6 to 26 inches: Channery silt loam
- 26 to 44 inches: Extremely channery silt loam
- 44 to 48 inches: Weathered bedrock

McKean County, Pennsylvania

LeF—Leck Kill channery silt loam, 25 to 50 percent slopes

Map Unit Setting

- Elevation: 500 to 1,500 feet
- Mean annual precipitation: 38 to 46 inches
- Mean annual air temperature: 45 to 54 degrees F
- Frost-free period: 140 to 170 days

Map Unit Composition

- Leck kill and similar soils: 80 percent

Description of Leck Kill

Setting

- Landform: Mountains
- Landform position (two-dimensional): Backslope
- Landform position (three-dimensional): Mountainflank
- Down-slope shape: Convex
- Across-slope shape: Convex
- Parent material: Reddish residuum derived from sedimentary rock

Properties and qualities

- Slope: 25 to 60 percent
- Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Low (about 4.8 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability (nonirrigated): 7e
- Hydrologic Soil Group: B

Typical profile

- 0 to 6 inches: Channery silt loam
- 6 to 26 inches: Channery silt loam
- 26 to 44 inches: Extremely channery silt loam
- 44 to 48 inches: Bedrock

McKean County, Pennsylvania

HbC—Hazleton channery loam, 8 to 15 percent slopes

Map Unit Setting

- Elevation: 1,100 to 2,500 feet
- Mean annual precipitation: 38 to 46 inches
- Mean annual air temperature: 46 to 57 degrees F
- Frost-free period: 140 to 170 days

Map Unit Composition

- Hazleton and similar soils: 80 percent

Description of Hazleton

Setting

- Landform: Mountains
- Landform position (two-dimensional): Backslope, summit
- Landform position (three-dimensional): Mountaintop, upper third of mountainflank
- Down-slope shape: Convex
- Across-slope shape: Convex
- Parent material: Residuum weathered from acid sandstone

Properties and qualities

- Slope: 8 to 15 percent
- Depth to restrictive feature: 40 to 60 inches to lithic bedrock
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.43 to 6.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Low (about 5.3 inches)

Interpretive groups

- Farmland classification: Farmland of statewide importance
- Land capability (nonirrigated): 3e
- Hydrologic Soil Group: A

Typical profile

- 0 to 6 inches: Channery loam
- 6 to 36 inches: Very channery sandy loam
- 36 to 54 inches: Extremely channery loamy sand
- 54 to 58 inches: Bedrock

McKean County, Pennsylvania

HeF—Hartleton and Buchanan soils, 25 to 60 percent slopes

Map Unit Setting

- Elevation: 500 to 1,800 feet
- Mean annual precipitation: 35 to 51 inches
- Mean annual air temperature: 46 to 55 degrees F
- Frost-free period: 115 to 165 days

Map Unit Composition

- Hartleton and similar soils: 50 percent
- Buchanan and similar soils: 30 percent

Description of Hartleton

Setting

- Landform: Hills
- Landform position (two-dimensional): Backslope
- Landform position (three-dimensional): Side slope
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Residuum weathered from sandstone and shale

Properties and qualities

- Slope: 25 to 60 percent
- Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
- Drainage class: Moderately well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Low (about 3.7 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability (nonirrigated): 7e
- Hydrologic Soil Group: B

Typical profile

- 0 to 5 inches: Channery silt loam
- 5 to 37 inches: Very channery silt loam
- 37 to 46 inches: Extremely channery loam
- 46 to 50 inches: Weathered bedrock

Description of Buchanan

Setting

- Landform: Mountain slopes, valley sides
- Landform position (two-dimensional): Foothslope
- Landform position (three-dimensional): Lower third of mountainflank
- Down-slope shape: Concave, linear
- Across-slope shape: Linear, concave

Properties and qualities

- Slope: 25 to 45 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Moderately well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
- Depth to water table: About 18 to 36 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Moderate (about 6.4 inches)

Typical profile

- 0 to 10 inches: Silt loam
- 10 to 25 inches: Silt loam
- 25 to 66 inches: Gravelly loam

APPENDIX B

Certificate of Analysis for Water Purveyors

APPENDIX C

Area of Review (AOR) Well Data Tables

Post 1985 Well Data Table

<u>Well Name</u>	<u>Depth (ft)</u>	<u>API Number</u>	<u>Latitude</u>	<u>Longitude</u>
Benson 1	2500	37-083-54508	41-51-53.10	-78-22-24.40
Benson 2	2300	37-083-54873	41-51-50.13	-78-22-33.10
Benson 4	2300	37-083-54874	41-52-00.24	-78-22-46.30
Benson 5	2300	37-083-54875	41-51-56.46	-78-22-47.17
Benson 6	1990	37-083-55287	41-51-49.90	-78-22-27.30
Benson 7	1907	37-083-55288	41-51-46.70	-78-22-30.68
Benson 8	1990	37-083-56139	41-51-46.00	-78-22-37.70
Denmark 1	2000	37-083-54876	41-52-17.01	-78-22-57.71
Denmark 2 (Plugged)	2300	37-083-54877	41-52-04.31	-78-23-04.18

Pre 1985 Well Data Table

<u>Well Name</u>	<u>Depth (ft)</u>	<u>API Number</u>	<u>Latitude</u>	<u>Longitude</u>
Well #1	NA	NA	41-51-53.56	-78-22-43.05
Well #2	NA	NA	41-51-49.21	-78-22-55.86
Well #3	NA	NA	41-51-46.68	-78-22-56.48
Well #4 (Plugged)	NA	37-083-16110	41-51-43.75	-78-22-56.45
Well #5	NA	NA	41-51-43.10	-78-22-49.03
Well #6	NA	NA	41-51-47.57	-78-22-40.60
Well #7	NA	NA	41-51-55.94	-78-22-37.55
Well #8	NA	NA	41-51-59.18	-78-22-40.03

*No Well Records exist for the Pre-1985 wells, including well logs.

**Pennsylvania DEP has not issued any API numbers for the wells.

USDW Locations in Review Area:

<u>Owner</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Phone</u>
R. Ford	41 52' 03.96"N	78 22' 42.97"W	Unlisted
V. Benson	41 51' 57.70"N	78 22' 38.57"W	814-887-2892
W. Shea	41 51' 55.25"N	78 22' 21.03"W	814-887-5809
J. Renner	41 51' 54.34"N	78 22' 15.26"W	814-887-5836
K. Shatley	41 51' 52.21"N	78 22' 15.78"W	814-887-6022
D. Leet	41 51' 52.17"N	78 22' 12.61"W	Unlisted
B. Schwartz	41 52' 00.80"N	78 22' 21.34"W	814-887-5736



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

DEP USE ONLY	
Permittee's eFACTS ID 275425	Auth ID 805313
Watershed Name	Quality

WELL PERMIT

Permittee ROBERT D BENSON & VICKIE L BENSON	OGO.# OGO-67310	Permit Number 37-083-54508-	Date Issued 11/03/2009
Address 3137 BELLS RUN RD		Farm Name & Well Number BENSON 1	Well Serial #
		Municipality Annin	County McKean
SHINGLEHOUSE, PA 16748-3427		7½ ' Quadrangle Name Port Allegany	Map Section # 1
Phone (814) 697-6895	Project #	Latitude 41-51-53.1000	Longitude -78-22-24.4000
Surf Elev at Site 1643 feet	Anticipated Total Depth 2500 feet	Well Type OG	Offset distances referenced to NE corner of map section. South 3735 feet West 10926 feet

This permit covering the well operator and well location shown above is evidence of permission granted to conduct activities in accordance with the Oil and Gas Act and the Oil and Gas Conservation Law, if the well is subject to that act and any rules and regulations promulgated thereunder, subject to the conditions contained herein and in accordance with the application submitted for this permit. This permit does not convey any property rights.

This permit and the permittee's authority to conduct the activities authorized by this permit are conditioned upon operator's compliance with applicable law and regulations.

Notification must be given to the district oil and gas inspector, the surface landowner and political subdivision of the date well drilling will begin at least 24 hours prior to commencement of drilling activities.

The permittee hereby authorizes and consents to allow, without delay, employees or agents of the Department to have access to and to inspect all areas upon presentation of appropriate credentials, without advance notice or a search warrant. This includes any property, facility, operation or activity governed by the Oil and Gas Act, the Oil and Gas Conservation Law, the Coal and Gas Resource Coordination Act and other statutes applicable to oil and gas activities administered by the Department. The authorization and consent shall include consent to the Department to collect samples of wastewaters or gases, to take photographs, to perform measurements, surveys, and other tests, to inspect any monitoring equipment, to inspect the methods of operation and disposal, and to inspect and copy documents required by the Department to be maintained. The authorization and consent includes consent to the Department to examine books, papers, and records pertinent to any matter under investigation pursuant to the Oil and Gas Act or pertinent to a determination of whether the operator is in compliance with the above referenced statutes. This condition in no way limits any other powers granted to the Department under the Oil and Gas Act and other statutes, rules and regulations applicable to these activities as administered by the Department.

This permit does not relieve the operator from the obligation to comply with the Clean Streams Law and all statutes, rules and regulations administered by the Department.

Special Permit Conditions:

This permit expires 11/03/2010 unless drilling is commenced on or before that date and prosecuted with due diligence.

Staci Gustafson for S. Craig Lobins
Regional Oil and Gas Program Manager

DAVE FORD

Oil and Gas Inspector

321 NORTH STATE ST., WARREN, PA 16365

Address

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Telephone

5500-PM-0G0040



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

Application for Transfer of Well Permit or Registration

To identify wells to be transferred, fill out this form, naming the former operator and the new operator. Please read instructions before starting. Use continued pages to list additional wells. ID 275425		Client ID	Auth #	DEP USE ONLY	INV.
279814	822833	per 2-23-10	per 3-2-10		
APS #	Bond Agreement #	C.S.	EXA.		
712866	12394	per 2-25-10	per 3-2-10		

TRANSFER FROM:				TRANSFER TO:			
Name ROBERT D. BENSON AND VICKIE L. BENSON	OGO# 67310	Name BENSON ENERGY, LLC	OGO# 67485				
Address 3137 BELLS RUN ROAD		Address 772 CHAMPLAIN HILL ROAD					
City SHINGLEHOUSE	State PA	Zip 16748	City SMETHPORT	State PA	Zip 16749		
Telephone 814-697-6895	Fax	814 697-6895	Telephone 814-887-5060	Fax			
Bond Number:		12232	Bond Number:		N/A		

SIGNATURES and CERTIFICATION

Subject to the penalties of Title 18-PA C.S. §4904 relating to unsworn falsification to authorities, I certify that I have the authority to submit this request for transfer of permit or registration for the oil / gas wells listed herein. Further, I certify that the information provided on this form and attachments is true and correct to the best of my knowledge and information.

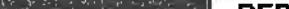
SIGNATURE of Transferor, or Transferor's authorized agent acting on behalf of the Transferor.	SIGNATURE of Transferee, or Transferee's authorized agent acting on behalf of the Transferee.
 Robert D. Benson Vickie L. Benson 2/5/10 Signature Date Robert D. Benson/ Vickie L. Benson (Type or print name and title)	 Brice N. Benson 2/5/10 Signature Date Brice N. Benson Managing Member/ President (Type or print name and title)

WELLS TO BE TRANSFERRED

RECEIVED

FEB 08 2010

ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

Page 1 of 1	DEP USE ONLY
This application is a request to transfer the permits or registrations of 1 wells, the total of all pages.	
Approved by: Regional Oil and Gas Manager Date  3/1/10	



copy

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

WELL PERMIT

DEP USE ONLY	
Permittee's eFACTS ID	Auth ID
278814	826995
Watershed Name	Quality

Permittee BENSON ENERGY LLC	OGO # OGO-67485	Permit Number 37-083-54873-	Date Issued 04/29/2010
Address 772 CHAMPLIN HILL RD		Farm Name & Well Number BENSON 2	
		Municipality Keating	County McKean
SMETHPORT, PA 16749-5316		7½' Quadrangle Name Smethport	Map Section # 3
Phone (814) 887-5060	Project #	Latitude 41-51-50.1300	Longitude -78-22-33.1000
Surf Elev at Site 1686 feet	Anticipated Total Depth 2300 feet	Well Type OL	Offset distances referenced to NE corner of map section. South 4035 feet West 234 feet

This permit covering the well operator and well location shown above is evidence of permission granted to conduct activities in accordance with the Oil and Gas Act and the Oil and Gas Conservation Law, if the well is subject to that act and any rules and regulations promulgated thereunder, subject to the conditions contained herein and in accordance with the application submitted for this permit. This permit does not convey any property rights.

This permit and the permittee's authority to conduct the activities authorized by this permit are conditioned upon operator's compliance with applicable law and regulations.

Notification must be given to the district oil and gas inspector, the surface landowner and political subdivision of the date well drilling will begin at least 24 hours prior to commencement of drilling activities.

The permittee hereby authorizes and consents to allow, without delay, employees or agents of the Department to have access to and to inspect all areas upon presentation of appropriate credentials, without advance notice or a search warrant. This includes any property, facility, operation or activity governed by the Oil and Gas Act, the Oil and Gas Conservation Law, the Coal and Gas Resource Coordination Act and other statutes applicable to oil and gas activities administered by the Department. The authorization and consent shall include consent to the Department to collect samples of wastewaters or gases, to take photographs, to perform measurements, surveys, and other tests, to inspect any monitoring equipment, to inspect the methods of operation and disposal, and to inspect and copy documents required by the Department to be maintained. The authorization and consent includes consent to the Department to examine books, papers, and records pertinent to any matter under investigation pursuant to the Oil and Gas Act or pertinent to a determination of whether the operator is in compliance with the above referenced statutes. This condition in no way limits any other powers granted to the Department under the Oil and Gas Act and other statutes, rules and regulations applicable to these activities as administered by the Department.

This permit does not relieve the operator from the obligation to comply with the Clean Streams Law and all statutes, rules and regulations administered by the Department.

Special Permit Conditions:

This permit expires 04/29/2011 unless drilling is commenced on or before that date and prosecuted with due diligence.

Staci Gustafson for S. Craig Lobias
Regional Oil and Gas Program Manager

DAVE FORD
Oil and Gas Inspector

321 NORTH STATE ST., WARREN, PA 16365
Address

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Telephone

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

WELL PERMIT

DEP USE ONLY	
Permittee's eFACTS ID 278814	Auth ID 827001
Watershed Name	Quality

Permittee BENSON ENERGY LLC	OGO # OGO-67485	Permit Number 37-083-54874-	Date Issued 04/29/2010
Address 772 CHAMPLIN HILL RD		Farm Name & Well Number BENSON 4	Well Serial #
		Municipality Keating	County McKean
SMETHPORT, PA 16749-5316		7 1/4' Quadrangle Name Smethport	Map Section # 3
Phone (814) 887-5060	Project #	Latitude 41-52-0.2400	Longitude -78-22-46.3000
Surf Elev at Site 1676 feet	Anticipated Total Depth 2300 feet	Well Type OL	Offset distances referenced to NE corner of map section. South 3012 feet West 1233 feet

This permit covering the well operator and well location shown above is evidence of permission granted to conduct activities in accordance with the Oil and Gas Act and the Oil and Gas Conservation Law, if the well is subject to that act and any rules and regulations promulgated thereunder, subject to the conditions contained herein and in accordance with the application submitted for this permit. This permit does not convey any property rights.

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Special Permit Conditions:

This permit expires 04/29/2011 unless drilling is commenced on or before that date and prosecuted with due diligence.

Staci Gustafson for S. Craig Lohris
Regional Oil and Gas Program Manager

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

WELL PERMIT

DEP USE ONLY	
Permittee's eFACTS ID 278814	Auth ID 827005
Watershed Name	Quality

Permittee BENSON ENERGY LLC	OGO.# OGO-67485	Permit Number 37-083-54875-	Date Issued 04/29/2010
Address 772 CHAMPLIN HILL RD		Farm Name & Well Number BENSON 5	
		Municipality Keating	County McKean
SMETHPORT, PA 16749-5316		7½' Quadrangle Name Smethport	
Phone (814) 887-5060	Project #	Latitude 41-51-56.4600	Longitude -78-22-47.1700
Surf Elev at Site 1728 feet	Anticipated Total Depth 2300 feet	Well Type OL	Offset distances referenced to NE corner of map section. South 3394 feet West 1299 feet

This permit covering the well operator and well location shown above is evidence of permission granted to conduct activities in accordance with the Oil and Gas Act and the Oil and Gas Conservation Law, if the well is subject to that act and any rules and regulations promulgated thereunder, subject to the conditions contained herein and in accordance with the application submitted for this permit. This permit does not convey any property rights.

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This permit does not relieve the operator from the obligation to comply with the Clean Streams Law and all statutes, rules and regulations administered by the Department.

Special Permit Conditions:

This permit expires 04/29/2011 unless drilling is commenced on or before that date and prosecuted with due diligence.

Stacy Gustafson for S. Craig Lebins
Regional Oil and Gas Program Manager

DAVE FORD

Oil and Gas Inspector

321 NORTH STATE ST., WARREN, PA 16365

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Telephone



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

WELL PERMIT

DEP USE ONLY	
Permittee's eFACTS ID 278814	Auth ID 859195
Watershed Name	Quality

Permittee BENSON ENERGY LLC	OGO # OGO-67485	Permit Number 37-083-55287-00	Date Issued 01/05/2011
Address 772 CHAMPLIN HILL RD		Farm Name & Well Number BENSON 6	
		Municipality Annin	County McKean
SMETHPORT, PA 16749-5316		7½' Quadrangle Name Port Allegany	
Phone (814) 887-5060	Project #	Latitude 41-51-49.9000	Longitude -78-22-27.3000
Surf Elev at Site 1756 feet	Anticipated Total Depth 1000 feet 561	Well Type OL	Offset distances referenced to NE corner of map section. South 4059 feet West 11146 feet

This permit covering the well operator and well location shown above is evidence of permission granted to conduct activities in accordance with the Oil and Gas Act and the Oil and Gas Conservation Law, if the well is subject to that act and any rules and regulations promulgated thereunder, subject to the conditions contained herein and in accordance with the application submitted for this permit. This permit does not convey any property rights.

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This permit does not relieve the operator from the obligation to comply with the Clean Streams Law and all statutes, rules and regulations administered by the Department.

Special Permit Conditions:

This permit expires 01/05/2012 unless drilling is commenced on or before that date and prosecuted with due diligence.

Regional Oil and Gas Program Manager

Timothy Curry
Oil & Gas Inspector

321 N. State St.
N. Warren, PA 16365

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

WELL PERMIT

DEP USE ONLY	
Permittee's eFACTS ID 278814	Auth ID 859197
Watershed Name	Quality

Permittee BENSON ENERGY LLC	OGO.# OGO-67485	Permit Number 37-083-55288-00	Date Issued 01/05/2011
Address 772 CHAMPLIN HILL ROAD		Farm Name & Well Number BENSON 7	
SMETHPORT, PA 16749-5316		Municipality Keating	County McKean
Phone (814) 887-5060	Project #	7½' Quadrangle Name Smethport	
Surf Elev at Site 1775 feet	Anticipated Total Depth 500 4900 feet 1990	Well Type OL	Map Section # 3
Latitude 41-51-46.7000		Longitude -78-22-30.6800	
Offset distances referenced to NE corner of map section. South 4382 feet West 51 feet			

This permit covering the well operator and well location shown above is evidence of permission granted to conduct activities in accordance with the Oil and Gas Act and the Oil and Gas Conservation Law, if the well is subject to that act and any rules and regulations promulgated thereunder, subject to the conditions contained herein and in accordance with the application submitted for this permit. This permit does not convey any property rights.

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This permit does not relieve the operator from the obligation to comply with the Clean Streams Law and all statutes, rules and regulations administered by the Department.

Special Permit Conditions:

This permit expires 01/05/2012 unless drilling is commenced on or before that date and prosecuted with due diligence.

Regional Oil and Gas Program Manager

Timothy Curry
Oil & Gas Inspector

321 N. State St.
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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

DEP USE ONLY	
Permittee's eFACTS ID 278814	Auth ID 977041
Watershed Name	Quality

WELL PERMIT

Permittee BENSON ENERGY LLC	OGO.# OGO-67485	Permit Number 37-083-56139-00-00	Date Issued 07/18/2013
Address 772 CHAMPLIN HILL RD		Farm Name & Well Number BENSON 8	
		Municipality Keating	County McKean
SMETHPORT, PA 16749-5316		7 1/4 Quadrangle Name Smethport	
Phone (814) 887-5060	Project #	Latitude 41-51-46.0000	Longitude -78-22-37.7000
Surf Elev at Site 1742 feet	Anticipated Total Depth 1990 feet	Offset distances referenced to NE corner of map section South 4453 feet West 582 feet	

This permit covering the well operator and well location shown above is evidence of permission granted to conduct activities in accordance with the Oil and Gas Act and the Oil and Gas Conservation Law, if the well is subject to that act and any rules and regulations promulgated thereunder, subject to the conditions contained herein and in accordance with the application submitted for this permit. This permit does not convey any property rights.

This permit and the permittee's authority to conduct the activities authorized by this permit are conditioned upon operator's compliance with applicable law and regulations.

Notification must be given to the district oil and gas inspector, the surface landowner and political subdivision of the date well drilling will begin at least 24 hours prior to commencement of drilling activities.

The permittee hereby authorizes and consents to allow, without delay, employees or agents of the Department to have access to and to inspect all areas upon presentation of appropriate credentials, without advance notice or a search warrant. This includes any property, facility, operation or activity governed by the Oil and Gas Act, the Oil and Gas Conservation Law, the Coal and Gas Resource Coordination Act and other statutes applicable to oil and gas activities administered by the Department. The authorization and consent shall include consent to the Department to collect samples of wastewater or gases, to take photographs, to perform measurements, surveys, and other tests, to inspect any monitoring equipment, to inspect the methods of operation and disposal, and to inspect and copy documents required by the Department to be maintained. The authorization and consent includes consent to the Department to examine books, papers, and records pertinent to any matter under investigation pursuant to the Oil and Gas Act or pertinent to a determination of whether the operator is in compliance with the above referenced statutes. This condition in no way limits any other powers granted to the Department under the Oil and Gas Act and other statutes, rules and regulations applicable to these activities as administered by the Department.

This permit does not relieve the operator from the obligation to comply with the Clean Streams Law and all statutes, rules and regulations administered by the Department.

Special Permit Conditions:

The Operator shall inform their county DEP Oil & Gas Inspector 3 days prior to land application activity. The Operator shall follow 25 Pa Code §78.56 and 78.60 through 78.63 regulations as applicable.

Contact the Oil & Gas Inspector at least 24 hours prior to commencing any frac/stimulation procedures.

This permit expires 07/18/2014 unless drilling is commenced on or before that date and prosecuted with due diligence.

Regional Oil and Gas Program Manager

Tim Curry
Oil & Gas Inspector

321 N. State St.
Warren, PA 16365

814-723-3273
Telephone



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

WELL PERMIT

DEP USE ONLY	
Permittee's eFACTS ID 278814	Auth ID 828150
Watershed Name	Quality

Permittee BENSON ENERGY LLC	OGO.# OGO-67485	Permit Number 37-083-54876-	Date Issued 05/18/2010
Address 772 CHAMPLIN HILL RD		Farm Name & Well Number DENMARK 1	Well Serial #
		Municipality Keating	County McKean
SMETHPORT, PA 16749-5316		7½' Quadrangle Name Smethport	Map Section # 3
Phone (814) 887-5060	Project #	Latitude 41-52-17.0100	Longitude -78-22-57.7100
Surf Elev at Site 1535 feet	Anticipated Total Depth 2000 feet	Well Type OL	Offset distances referenced to NE corner of map section. South 1314 feet West 2096 feet

This permit covering the well operator and well location shown above is evidence of permission granted to conduct activities in accordance with the Oil and Gas Act and the Oil and Gas Conservation Law, if the well is subject to that act and any rules and regulations promulgated thereunder, subject to the conditions contained herein and in accordance with the application submitted for this permit. This permit does not convey any property rights.

This permit and the permittee's authority to conduct the activities authorized by this permit are conditioned upon operator's compliance with applicable law and regulations.

Notification must be given to the district oil and gas inspector, the surface landowner and political subdivision of the date well drilling will begin at least 24 hours prior to commencement of drilling activities.

The permittee hereby authorizes and consents to allow, without delay, employees or agents of the Department to have access to and to inspect all areas upon presentation of appropriate credentials, without advance notice or a search warrant. This includes any property, facility, operation or activity governed by the Oil and Gas Act, the Oil and Gas Conservation Law, the Coal and Gas Resource Coordination Act and other statutes applicable to oil and gas activities administered by the Department. The authorization and consent shall include consent to the Department to collect samples of wastewaters or gases, to take photographs, to perform measurements, surveys, and other tests, to inspect any monitoring equipment, to inspect the methods of operation and disposal, and to inspect and copy documents required by the Department to be maintained. The authorization and consent includes consent to the Department to examine books, papers, and records pertinent to any matter under investigation pursuant to the Oil and Gas Act or pertinent to a determination of whether the operator is in compliance with the above referenced statutes. This condition in no way limits any other powers granted to the Department under the Oil and Gas Act and other statutes, rules and regulations applicable to these activities as administered by the Department.

This permit does not relieve the operator from the obligation to comply with the Clean Streams Law and all statutes, rules and regulations administered by the Department.

Special Permit Conditions:

This permit expires 05/18/2011 unless drilling is commenced on or before that date and prosecuted with due diligence.

Stacy Gustafson for S. Craig Lobins
 Regional Oil and Gas Program Manager

DAVE FORD
 Oil and Gas Inspector

321 NORTH STATE ST., WARREN, PA 16365
 Address

814/723-3273
 Telephone

copy

For assistance in accessing this document, please contact: R3_UIC_Mailbox@epa.gov

5500-FM-OG0001A Rev. 11/2007



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

WELL PERMIT

DEP USE ONLY	
Permittee's eFACTS ID 278814	Auth ID 828158
Watershed Name	Quality

Permittee BENSON ENERGY LLC	OGO.# OGO-67485	Permit Number 37-083-54877-	Date Issued 04/30/2010
Address 772 CHAMPLIN HILL RD		Farm Name & Well Number DENMARK 2	Well Serial #
		Municipality Keating	County McKean
SMETHPORT, PA 16749-5316		7½' Quadrangle Name Smethport	Map Section # 3
Phone (814) 887-5060	Project #	Latitude 41-52-4.3100	Longitude -78-23-4.1800
Surf Elev at Site 1805 feet	Anticipated Total Depth 2300 feet	Well Type OL	Offset distances referenced to NE corner of map section. South 2600 feet West 2586 feet

This permit covering the well operator and well location shown above is evidence of permission granted to conduct activities in accordance with the Oil and Gas Act and the Oil and Gas Conservation Law, if the well is subject to that act and any rules and regulations promulgated thereunder, subject to the conditions contained herein and in accordance with the application submitted for this permit. This permit does not convey any property rights.

This permit and the permittee's authority to conduct the activities authorized by this permit are conditioned upon operator's compliance with applicable law and regulations.

Notification must be given to the district oil and gas inspector, the surface landowner and political subdivision of the date well drilling will begin at least 24 hours prior to commencement of drilling activities.

The permittee hereby authorizes and consents to allow, without delay, employees or agents of the Department to have access to and to inspect all areas upon presentation of appropriate credentials, without advance notice or a search warrant. This includes any property, facility, operation or activity governed by the Oil and Gas Act, the Oil and Gas Conservation Law, the Coal and Gas Resource Coordination Act and other statutes applicable to oil and gas activities administered by the Department. The authorization and consent shall include consent to the Department to collect samples of wastewaters or gases, to take photographs, to perform measurements, surveys, and other tests, to inspect any monitoring equipment, to inspect the methods of operation and disposal, and to inspect and copy documents required by the Department to be maintained. The authorization and consent includes consent to the Department to examine books, papers, and records pertinent to any matter under investigation pursuant to the Oil and Gas Act or pertinent to a determination of whether the operator is in compliance with the above referenced statutes. This condition in no way limits any other powers granted to the Department under the Oil and Gas Act and other statutes, rules and regulations applicable to these activities as administered by the Department.

This permit does not relieve the operator from the obligation to comply with the Clean Streams Law and all statutes, rules and regulations administered by the Department.

Special Permit Conditions:

This permit expires 04/30/2011 unless drilling is commenced on or before that date and prosecuted with due diligence.

Regional Oil and Gas Program Manager

DAVE FORD
Oil and Gas Inspector

321 NORTH STATE ST., WARREN, PA 16365

Address

814/723-3273
Telephone

THE COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 OFFICE OF OIL AND GAS MANAGEMENT

DEP USE ONLY

Site ID #	Primary Facility ID #
eFACTS Client #	Sub-facility ID #
Bonded Well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Bond Agreement #

CERTIFICATE OF WELL PLUGGING

WELL INFORMATION

Well Operator Benson Energy LLC	DEP ID# 278814	Well API# 37-083-54877- -	Well Farm Name Denmark	Well # 2
Address 772 Champlin Hill Road	LAT 41°52' 4.31"	NAD 83	Project Number	Serial #
	LONG - 78°23' 4" 			
City Smethport	State Pa	Zip 16749-5316	Municipality Keating	County McKean
Phone 814.887.5060	Fax		Email	USGS 7.5 min quadrangle map Smethport

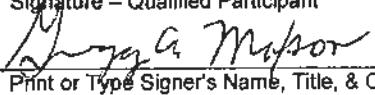
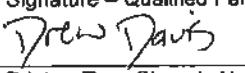
Complete the next section (coal) if applicable.

Coal <input type="checkbox"/> Operator <input type="checkbox"/> Owner <input type="checkbox"/> Lessee	Coal <input type="checkbox"/> Operator <input type="checkbox"/> Owner <input type="checkbox"/> Lessee	Coal <input type="checkbox"/> Operator <input type="checkbox"/> Owner <input type="checkbox"/> Lessee
Address	Address	Address
City, State, Zip	City, State, Zip	City, State, Zip

The undersigned representatives of the Well Operator certify that we participated in plugging this well, and that the work was started on (date) 7/29/2013, and that the well was plugged as follows:

Filling Material and Plugs	Depth		Casing and Tubing		
	From	To	Size	Pulled	Left
2B Stone	0	403	1-1/2"	1966'	0
Cement	403	488	7"	0	388
Gell	488	819	9-5/8"	0	15.7
Cement----Tagged	819	1053			
Gell	1053	1095			
Cement	1095	1281	Depth to coal seams, if any		
Gell	1281	1440			
Cement	1440	1582			
Gell	1582	1595			
Cement	1595	1705			
Gell	1705	1858	Describe Monument 1-1/2" Poly—Brass Tag W/ API#		
<u>Dept. approved Attainable Bottom</u> CEMENT	1858	1960			
Plug Back	1960	TD2134'			

Signature of Participants

Signature – Well Operator 	Signature – Qualified Participant 	Signature – Qualified Participant 
Print or Type Signer's Name and Title Gregory Maxson President Benson Energy, LLC	Print or Type Signer's Name, Title, & Co. Gregory Maxson, Pres. JJBucher Prod Corp	Print or Type Signer's Name, Title, & Co. Drew Davis, JJBPC

Signers certify that the work of plugging this well was completed on (date) 8/5/2013, and that the information above is true and accurate.

Upon completion of plugging, mail one copy of this certificate to each coal operator, owner, or lessee, if any, and one copy to the appropriate DEP Regional Oil and Gas Management Program office.

DEP USE ONLY	
<input type="checkbox"/> Approved	<input type="checkbox"/> Denied
DEP Rep:	Date:

Dept. of Environmental Protection
NW District Oil & Gas Operations
230 Chestnut Street
Meadville, PA 16335-3481

Dept. of Environmental Protection
SW District Oil & Gas Operations
400 Waterfront Drive
Pittsburgh, PA 15222-4745

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 OFFICE OF OIL AND GAS MANAGEMENT

 NOTICE OF INTENTION BY
 WELL OPERATOR TO PLUG A WELL

DEP USE ONLY	
Auth #	APS #
99854	
Site #	Primary Facility #
732454	
eFACTS Client #	Sub-Fac #
27804	

<input checked="" type="checkbox"/> Well Operator	<input type="checkbox"/> Coal Operator	DEP ID#	Well API # (Permit / Reg)	Date Drilled (If Known)
Benson Energy, LLC		278814	37-083-54877	5/10/17, 5-14
Address	Phone	Well Farm Name		
272 Champlin Hill Rd	814 887-5060	Denmark		
City	State	Zip Code	Well #	Well Serial #
Smethport	PA	16749	#2	
<input checked="" type="checkbox"/> Agent (contractor) acting on behalf of the operator named above.				
JJ Bucher Producing [Greg Maxson]				
Address	Phone	County	GPS Latitude	GPS Longitude
Bells Run Rd.	746 474-8272	McKean	4524.3100	78234.18083
City	State	Municipality		
Shinglehouse	PA	Keating Twp		
Zip Code		Attach well record if not previously submitted.		

Coal Operator, Owner, and Lessee

Complete this section if applicable. Prior to abandoning any well in an area

Underlain by a workable coal seam, the well operator or owner shall notify the coal operator, lessee, or owner of the intention to plug and abandon the well, and shall submit a plat showing the location and affix the date and time at which the work of plugging will commence.

Coal <input type="checkbox"/> Operator <input type="checkbox"/> Owner <input type="checkbox"/> Lessee	Coal <input type="checkbox"/> Operator <input type="checkbox"/> Owner <input type="checkbox"/> Lessee	Coal <input type="checkbox"/> Operator <input type="checkbox"/> Owner <input type="checkbox"/> Lessee			
Address	Address	Address			
City, State, Zip	City, State, Zip	City, State, Zip			
Phone	Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No	Phone	Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No	Phone	Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No
This Party hereby waives the rights to be notified of the date and time before plugging work will begin, and to be present at the plugging of this well.		This Party hereby waives the rights to be notified of the date and time before plugging work will begin, and to be present at the plugging of this well.		This Party hereby waives the rights to be notified of the date and time before plugging work will begin, and to be present at the plugging of this well.	
Signature:		Signature:		Signature:	

Scheduled Date and Time of Plugging

Plugging is scheduled to begin on (date) 6/13 at (time) TBA

Checklist and Additional Attached Information

Signature of Applicant (Operator or Agent)

Location Plat No
 Current Well Record
 Available Well Record *Previously Submitted*
 Application for Approval of Alternate Method of Plugging
 Other, describe:

Signature Brice N. Benson Date 5-31-17
 Print or Type Signer's Name and Title Brice N. Benson; President

DEP USE ONLY

If this well has not been permitted or registered previously, DEP hereby assigns this permit / registration number to the well location described in this notice:

API# 615,3 Date: 6/13/13
 Please refer to this number in all future correspondence.

Notice acknowledged by:

DEP Rep:
 (Signature)

(Print Name)

Date:

6/13

Geologist:

HP
 Date: 6/4/13

DEP will fill in the information below and send a copy of this notice to the applicant and these DEP staff or offices.

DEP Oil and Gas Inspector	DEP Mine Inspector	MID #	Rec'd in DEP Reg. Ofc. Plugging must begin within 30 days of:
Name	Name		
Address	Address		
City, State, Zip	City, State, Zip		
Phone	Phone		

RECEIVED

JUN 03 2013

Environmental Protection
 Northwest Regional Office



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program
WELL LOCATION PLAT

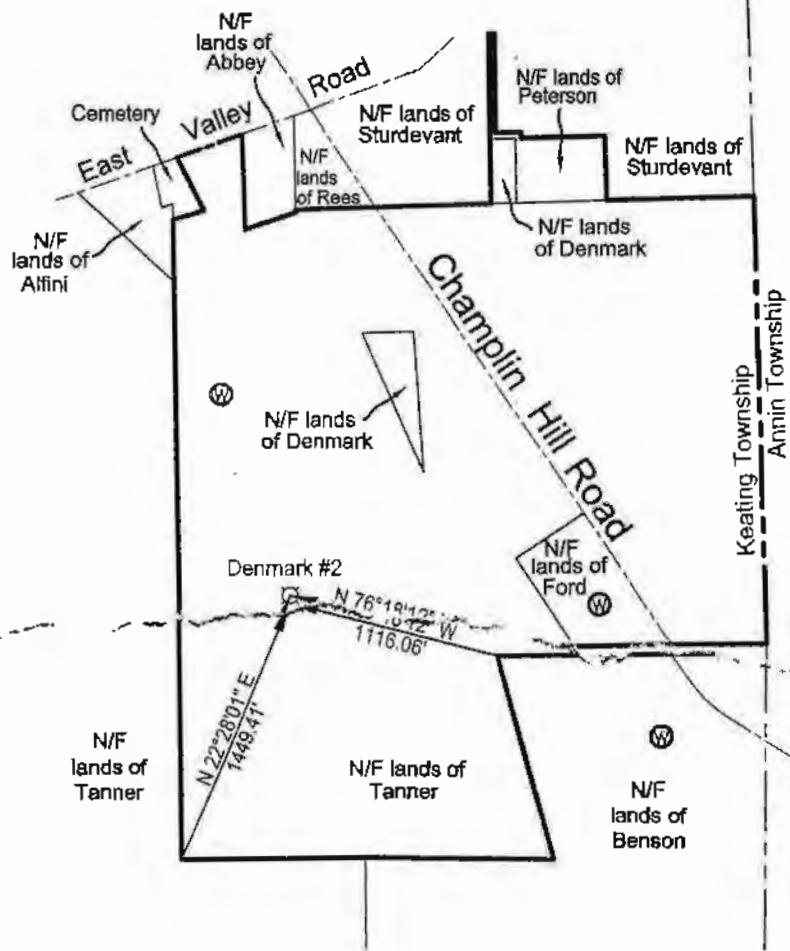
DEP USE ONLY	DEP Application Tracking #: Permit #: Project #:	G: c:
	083-54877	

Well is located on topo map 2600 feet south of latitude 41° 52' 30"

<input checked="" type="checkbox"/>	Denotes location of well on topo map.
	Surface Hole Coordinates:
True Latitude: NORTH 41° 52' 04.31"	
True Longitude: WEST 78° 23' 04.18"	

Denotes water supply

Top Hole Well is located on topo map 2586 feet west of longitude 78° 22' 30"



NORTH

D. Michael Canada

Surveyor or Engineer:	D. Michael Canada Pa. Lic. # 029272 E	Phone #: (716) 379-7918	Dwg #: 6904B	Date: March 2, 2010	Scale: 1 in. = 1000ft.	Tract Acreage: 210.77
Lat. & Long Metadata Method: RTK GPS		Accuracy: ± 5 ft.	Elevation Metadata Method: GPS		Survey Date: February 26, 2010	
Applicant / Well Operator Name: Benson Energy, LLC		DEP ID#:	Well(Farm) Name: Denmark		Well #: 2	Serial #:
Address: 772 Champlin Hill Road, Smethport, PA 16749			County - Code: McKean	Municipality: Keating	Well Type: vertical	
Surface Landowner / Lessor: Ward A. & Dawn M. Tanner			USGS 1/2 Quadrangle Map Name: Smethport		Map Section: 3	Surface Elevation: 1805 ft.
Target Formation(s): Haskell		Angle & Course of Deviation (Drilling):			Anticipated Total Depth TVD: 2300'	
Surface Owner of Water Purveyor with a Water Supply within 1,000 ft.		Approximate Course and Distance to Water Supply			Owner, Lessee, or Operator of Workable Coal Seam	
Tanner		N 18° 56' 53" W 1105.75'			Name of Coal Seam Owned, Leased, or Operated	

Plug Copy From DEP / Benson old hole #104

5500-FM-OG0005 Rev. 1/2010



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS MANAGEMENT PROGRAM

DEP USE ONLY	
Auth #	APS #
Site # 734414 eFACTS Client #	Primary Facility # Sub fac #

Notice of Intention by Well Operator to Plug a Well

<input checked="" type="checkbox"/> Well Operator <input type="checkbox"/> Coal Operator	DEP ID# 278814	Well API # (Permit / Reg) A4083-16110	Date Drilled (If Known) N/A
Address 792 Chaplin Hill Rd	Phone (814) 882-5060	Well Farm Name Benson	
City Smethport, PA	State PA	Well # SA	Well Serial #
<input type="checkbox"/> Agent (contractor) acting on behalf of the operator named above.		County McKean	Municipality
Address	Phone	Attach well record if not previously submitted.	
City	State Zip Code		

Coal Operator, Owner, and Lessee

Complete this section if applicable. Prior to abandoning any well in an area underlain by a workable coal seam, the well operator or owner shall notify the coal operator, lessee, or owner of the intention to plug and abandon the well, and shall submit a plat showing the location and affix the date and time at which the work of plugging will commence.

Coal <input type="checkbox"/> Operator <input type="checkbox"/> Owner <input type="checkbox"/> Lessee	Coal <input type="checkbox"/> Operator <input type="checkbox"/> Owner <input type="checkbox"/> Lessee	Coal <input type="checkbox"/> Operator <input type="checkbox"/> Owner <input type="checkbox"/> Lessee	
Address	Address	Address	
City, State, Zip	City, State, Zip	City, State, Zip	
Phone	Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No	Phone	Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No
This Party hereby waives the rights to be notified of the date and time before plugging work will begin, and to be present at the plugging of this well.		This Party hereby waives the rights to be notified of the date and time before plugging work will begin, and to be present at the plugging of this well.	
Signature:		Signature:	

Scheduled Date and Time of Plugging

Plugging is scheduled to begin on (date) 4/5/10 at (time) 11 AM

Checklist and Additional Attached Information

Signature of Applicant (Operator or Agent)

- Location Plat
- Current Well Record
- Available Well Record
- Application for Approval of Alternate Method of Plugging
- Other, describe: Metadata Attached

Signature
Brice N. Benson
Print or Type Signer's Name and Title
Brice N. Benson / President

Date
4/5/10

DEP USE ONLY	
If this well has not been permitted or registered previously, DEP hereby assigns this permit / registration number to the well location described in this notice:	Notice acknowledged by:
API# <u>083-16110</u> Date: <u>5/12/10</u>	DEP Rep: <u>B. N. Benson</u> Date: <u>5/12/10</u> Geologist: <u>SS</u>
Please refer to this number in all future correspondence.	

Date: 5/12/10

Date: 5/12/10

DEP will fill in the information below and send a copy of this notice to the applicant and these DEP staff or offices.

DEP Oil and Gas Inspector	DEP Mine Inspector MID #	Rec'd in DEP Reg. Ofc. Plugging must begin within 30 days of:
Name	Name	
Address	Address	
City, State, Zip	City, State, Zip	
Phone	Phone	

APPENDIX D

Benson #6 Well Log



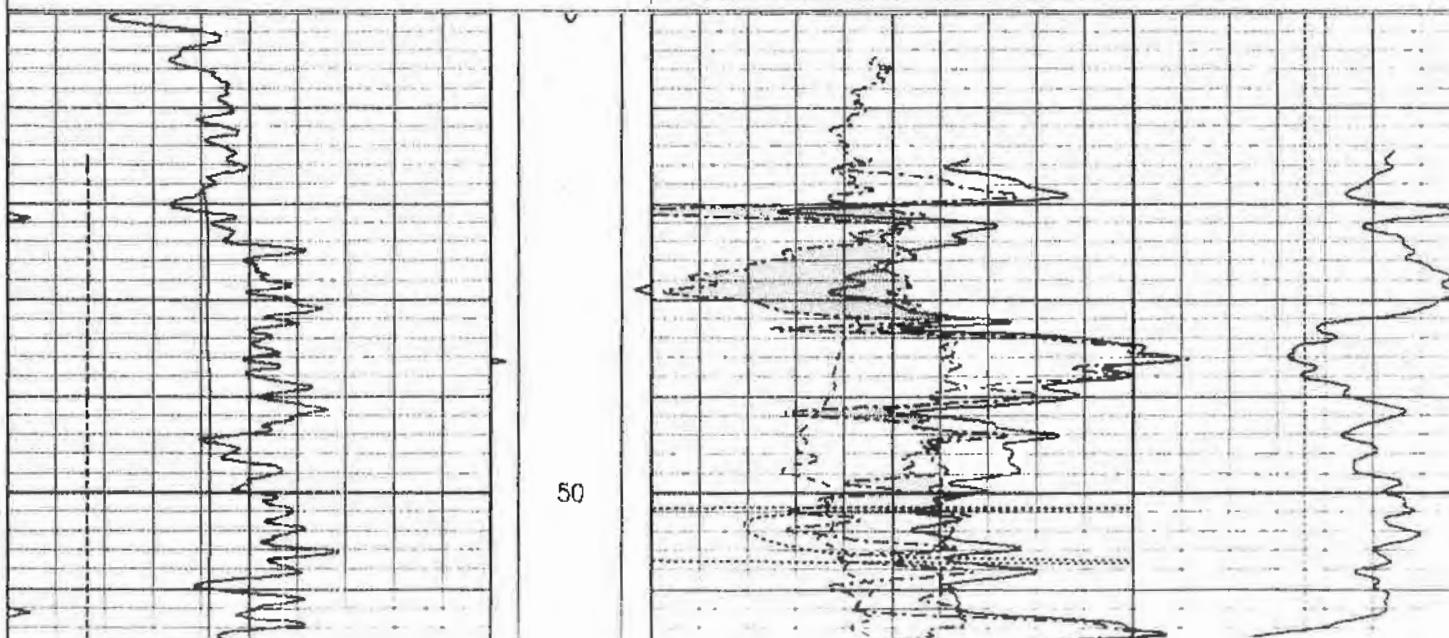
WELL SERVICES, INC.

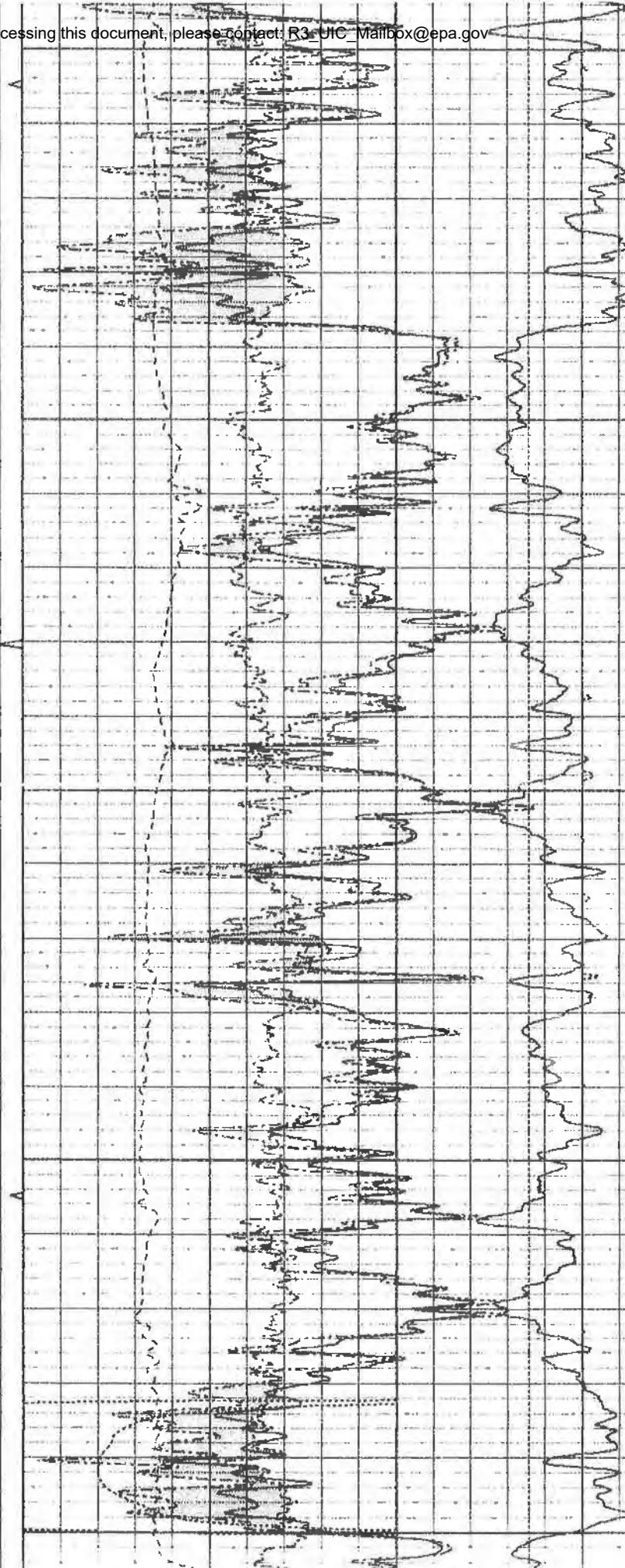
MAIN PASS

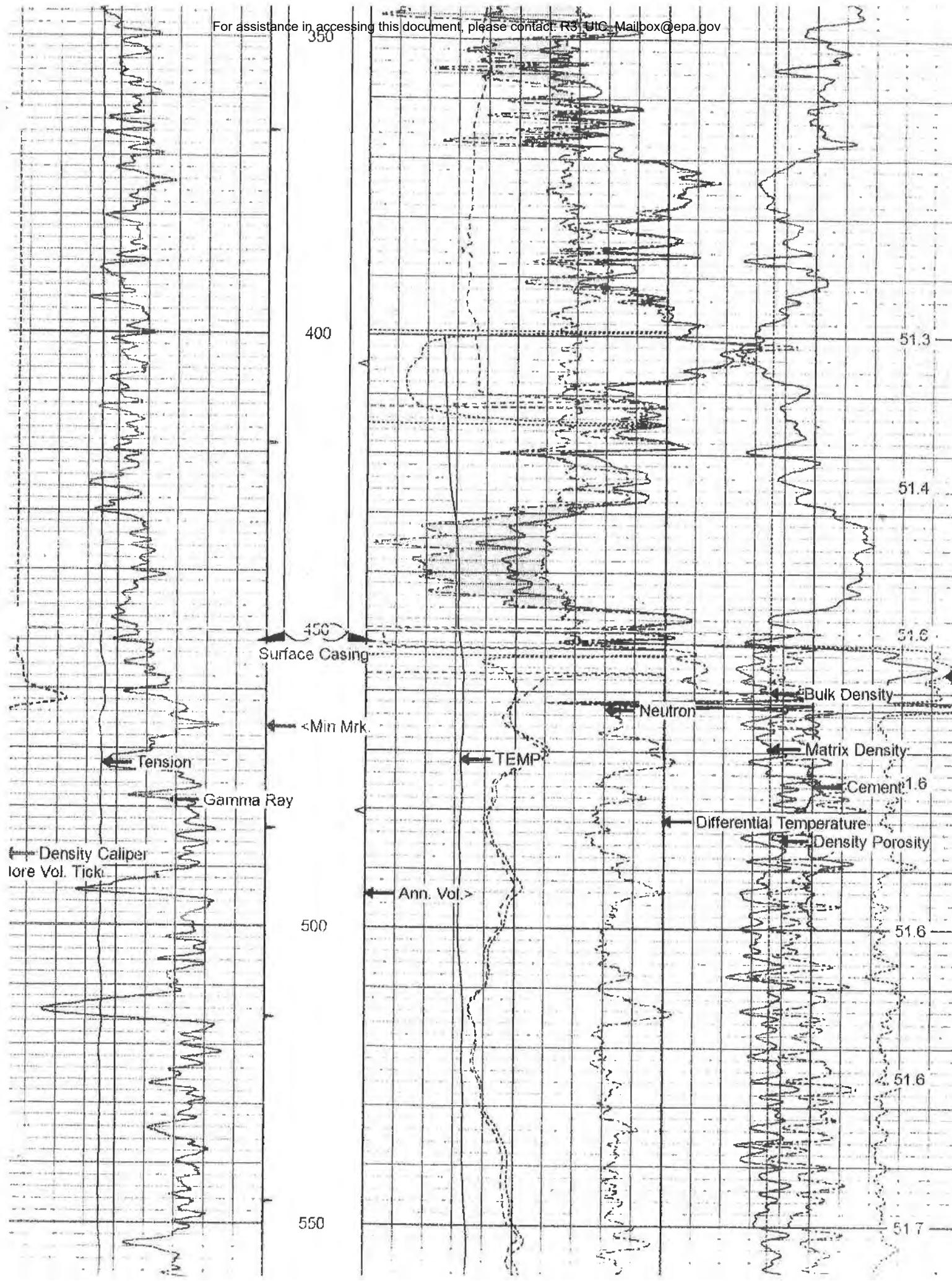
Database File: benson.db
 Dataset Pathname: benson/6/run1/merge2
 Presentation Format: pengold5
 Dataset Creation: Thu Jan 20 13:36:56 2011
 Charted by: Depth in Feet scaled 1:240

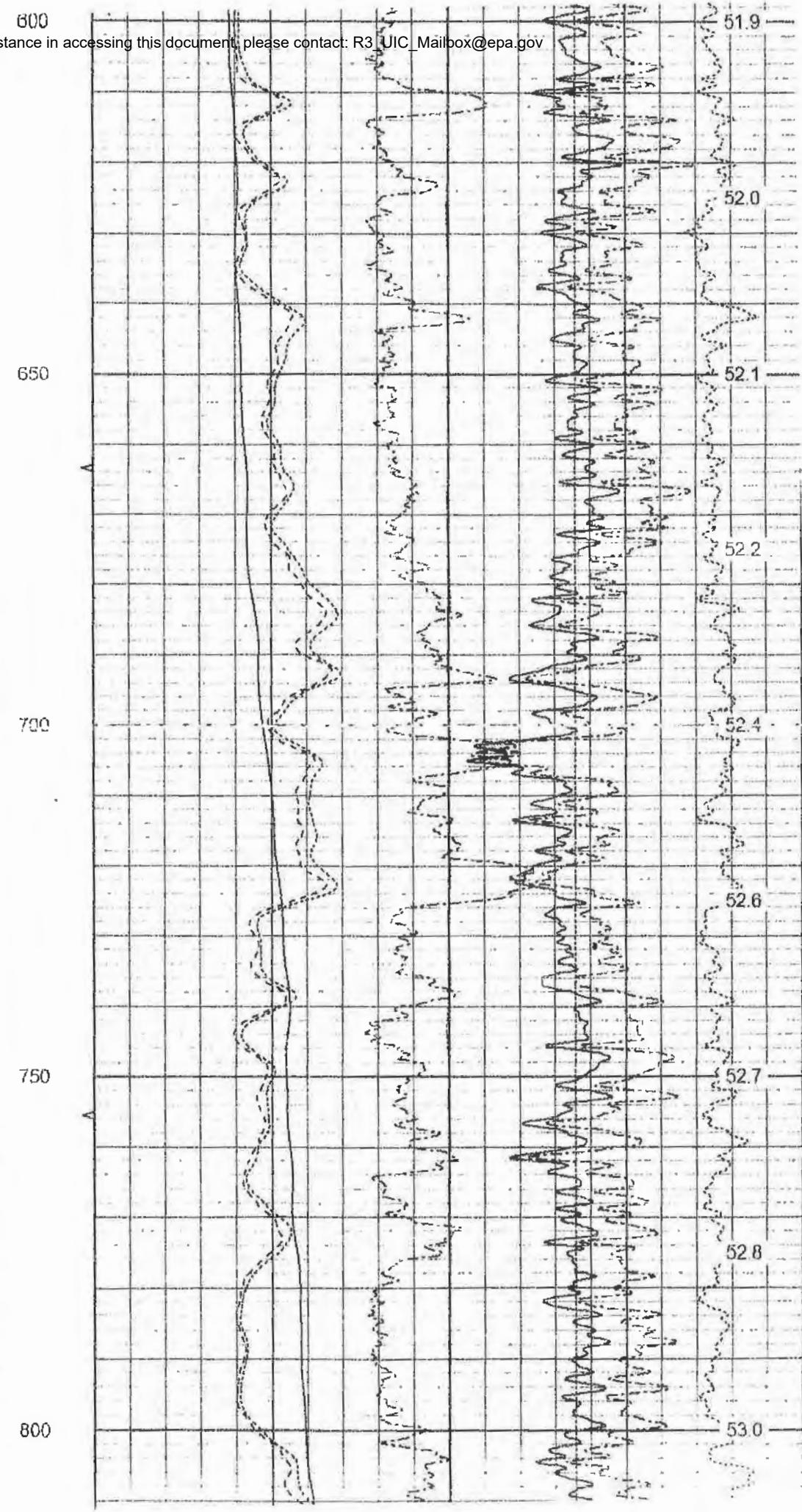
0	Gamma Ray (API)	200	Ann. Vol. =	30	Density, Porosity (pu)		
5	Density Caliper (in)	15	10 (ft3)	0.2	Bulk Density (g/cc)		
0	Tension (lb)	1500	<Min Mrk.	60	Temperature (degF)		
	Bore Vol. Tick (ft3)			-3	Differential Temperature (degF)		
				30	Neutron (pu)		
0			Deep Res. (Ohm-m)	100	50	Cement (cps)	
100			Deep Res. (Ohm-m)	200		C	
0			Medium Res. (Ohm-m)	100		-0.25	
100			Medium Res. (Ohm-m)	200			

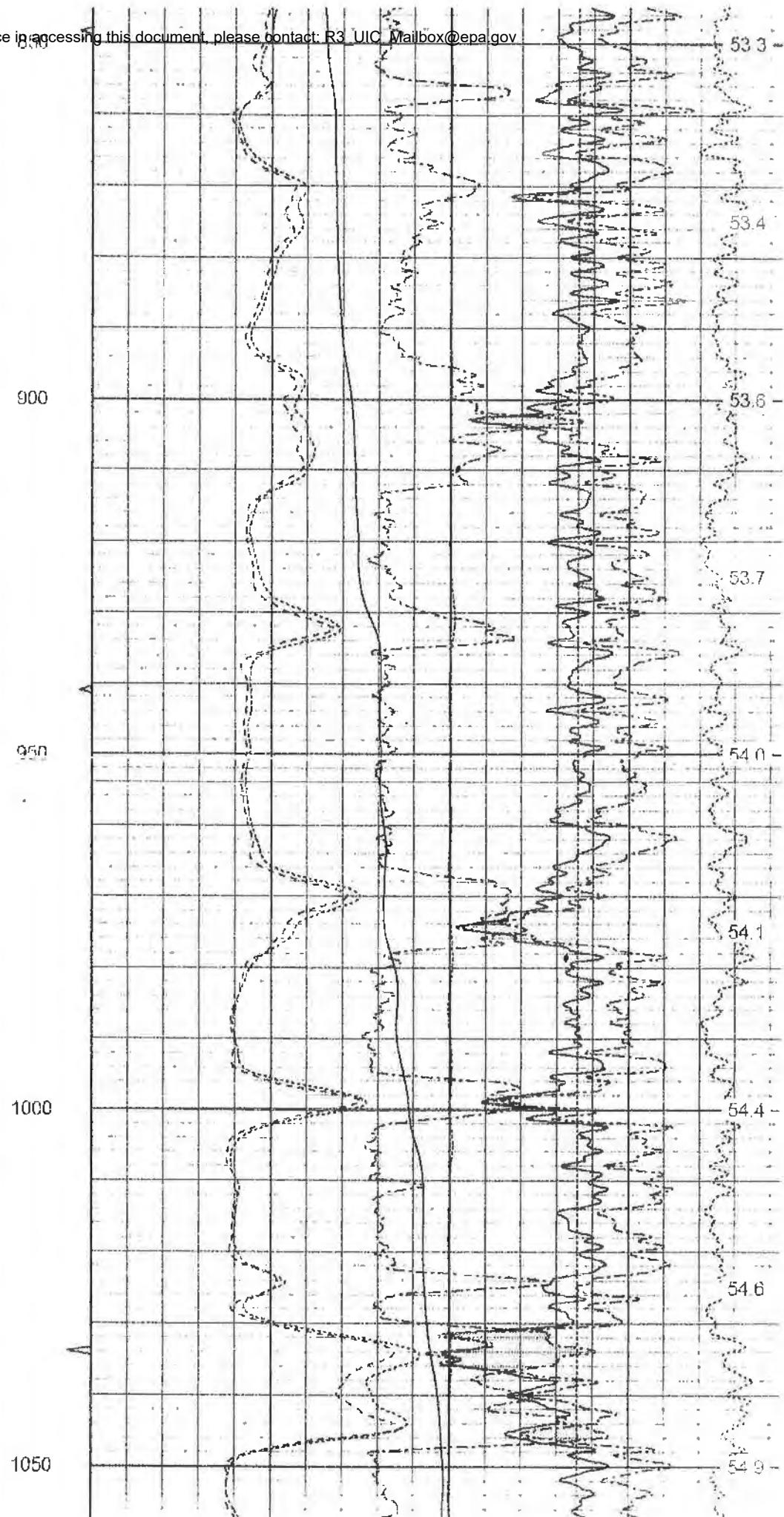
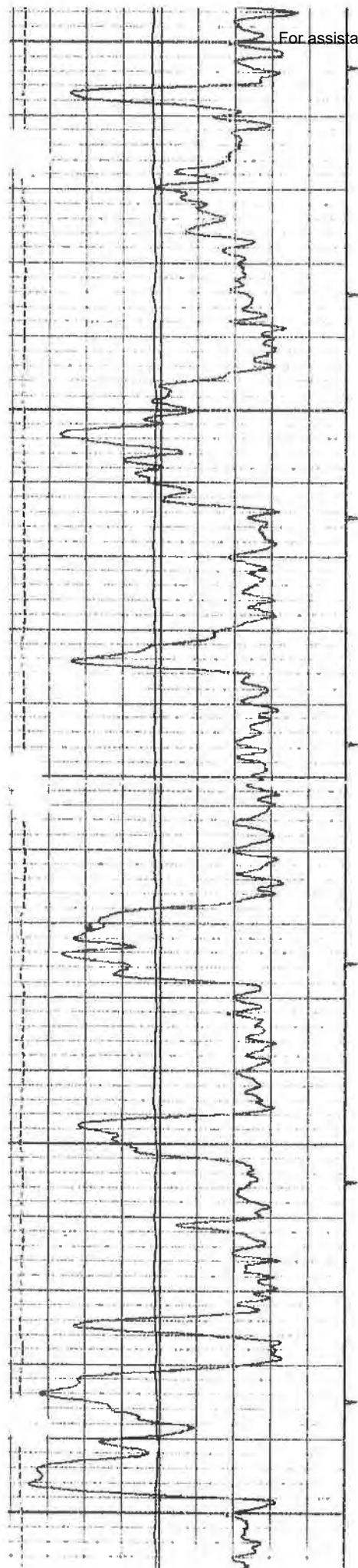
2 Matrix Density (g/cc)

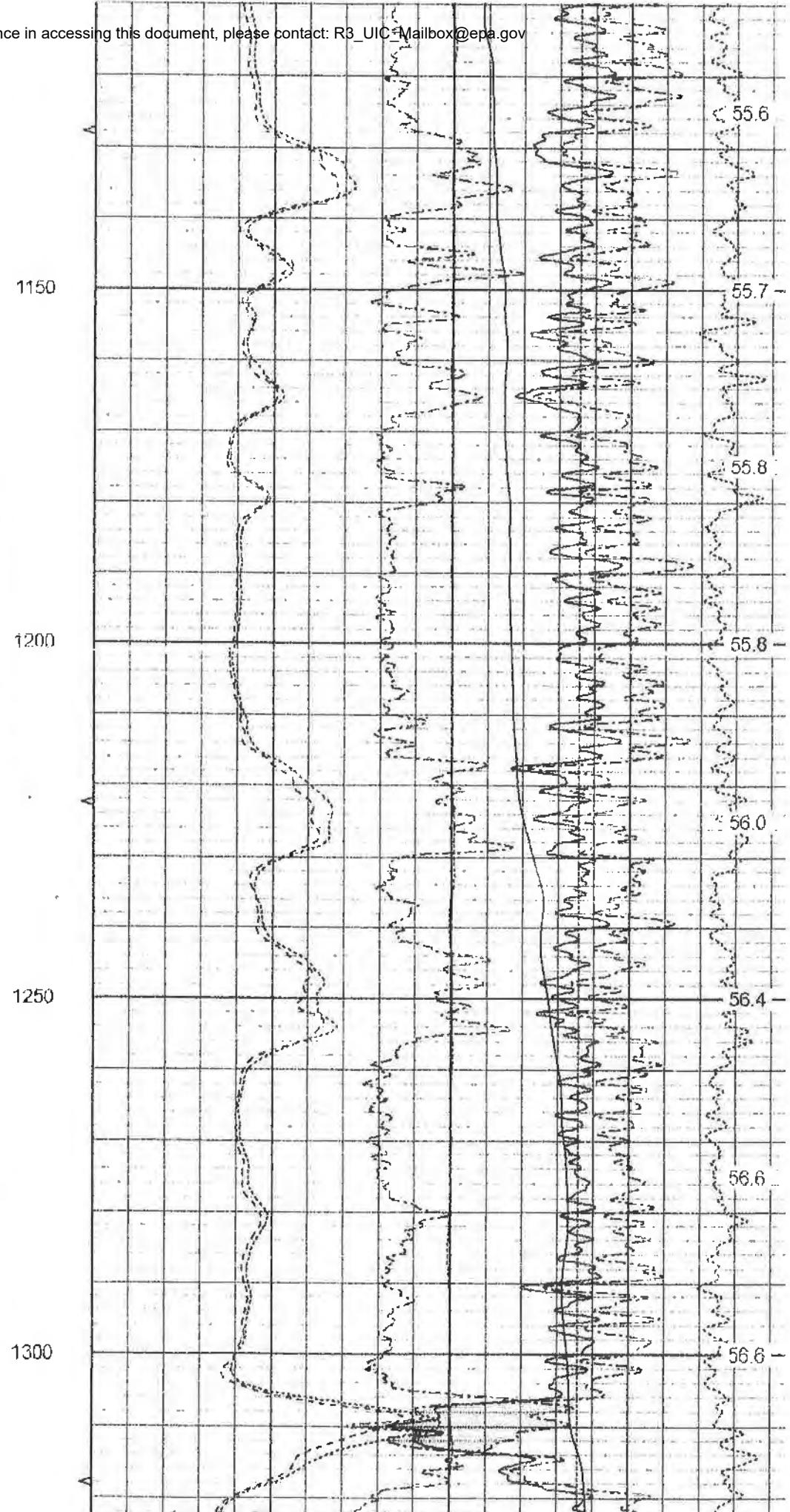












1350

1400

1450

1500

57.0

57.2

57.4

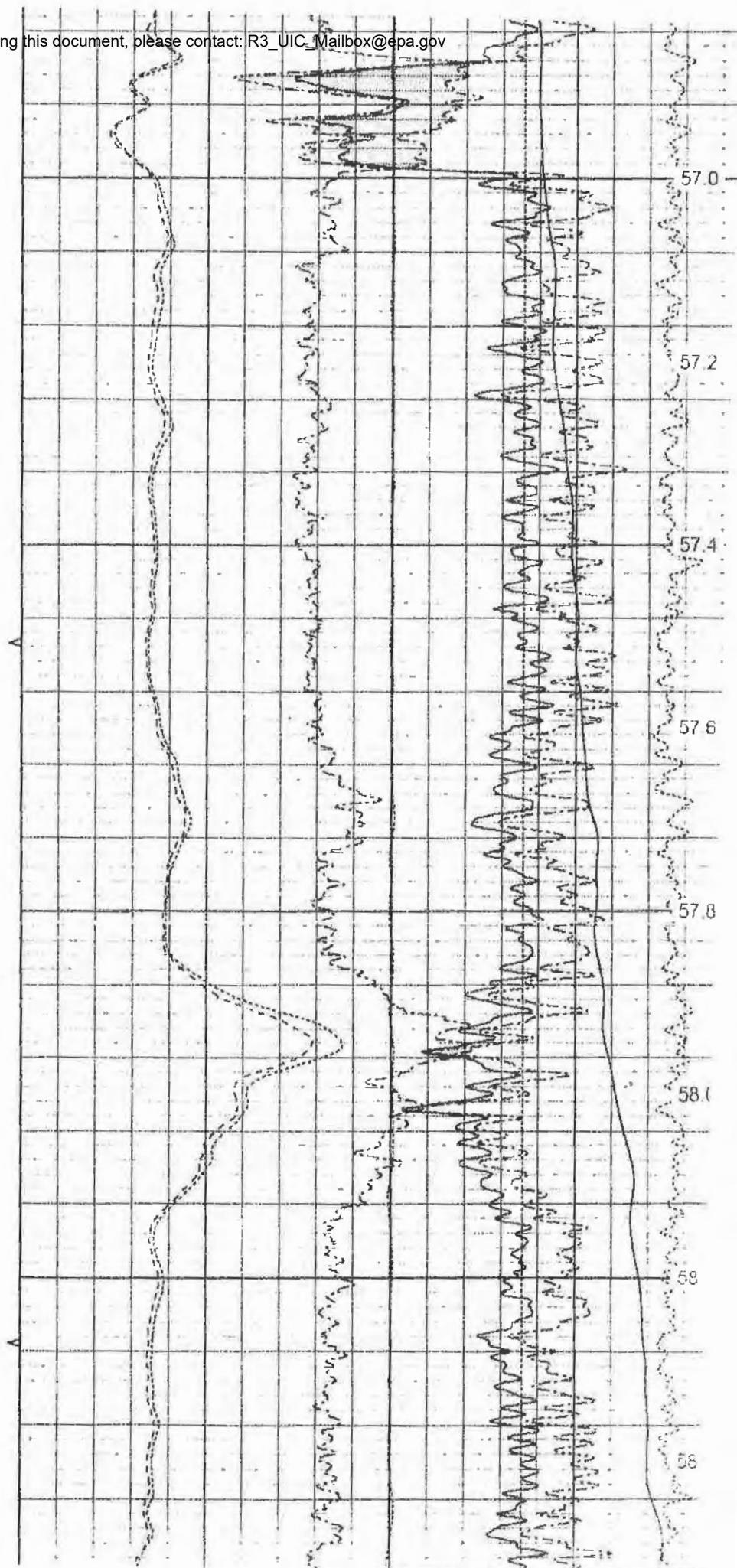
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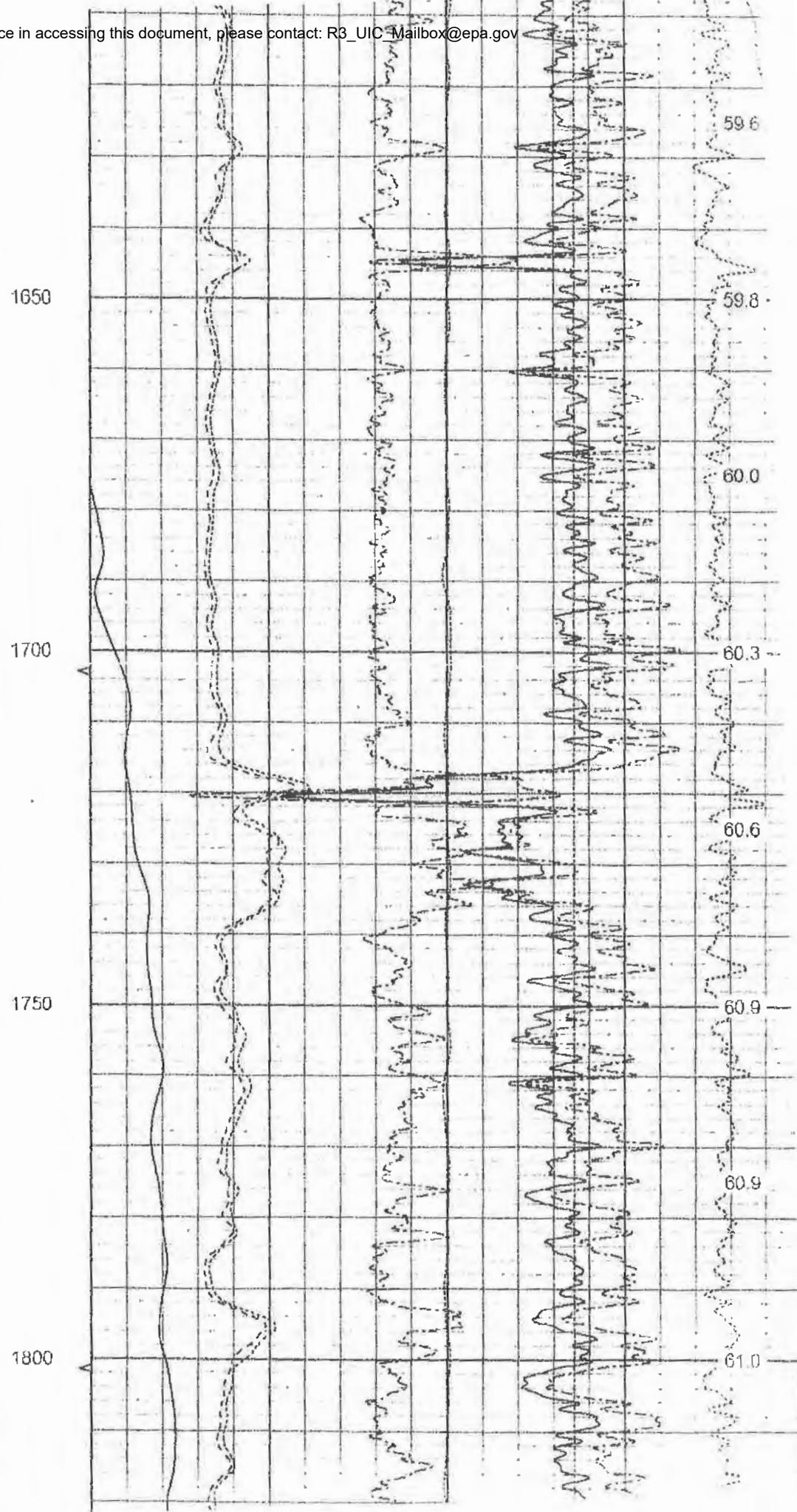
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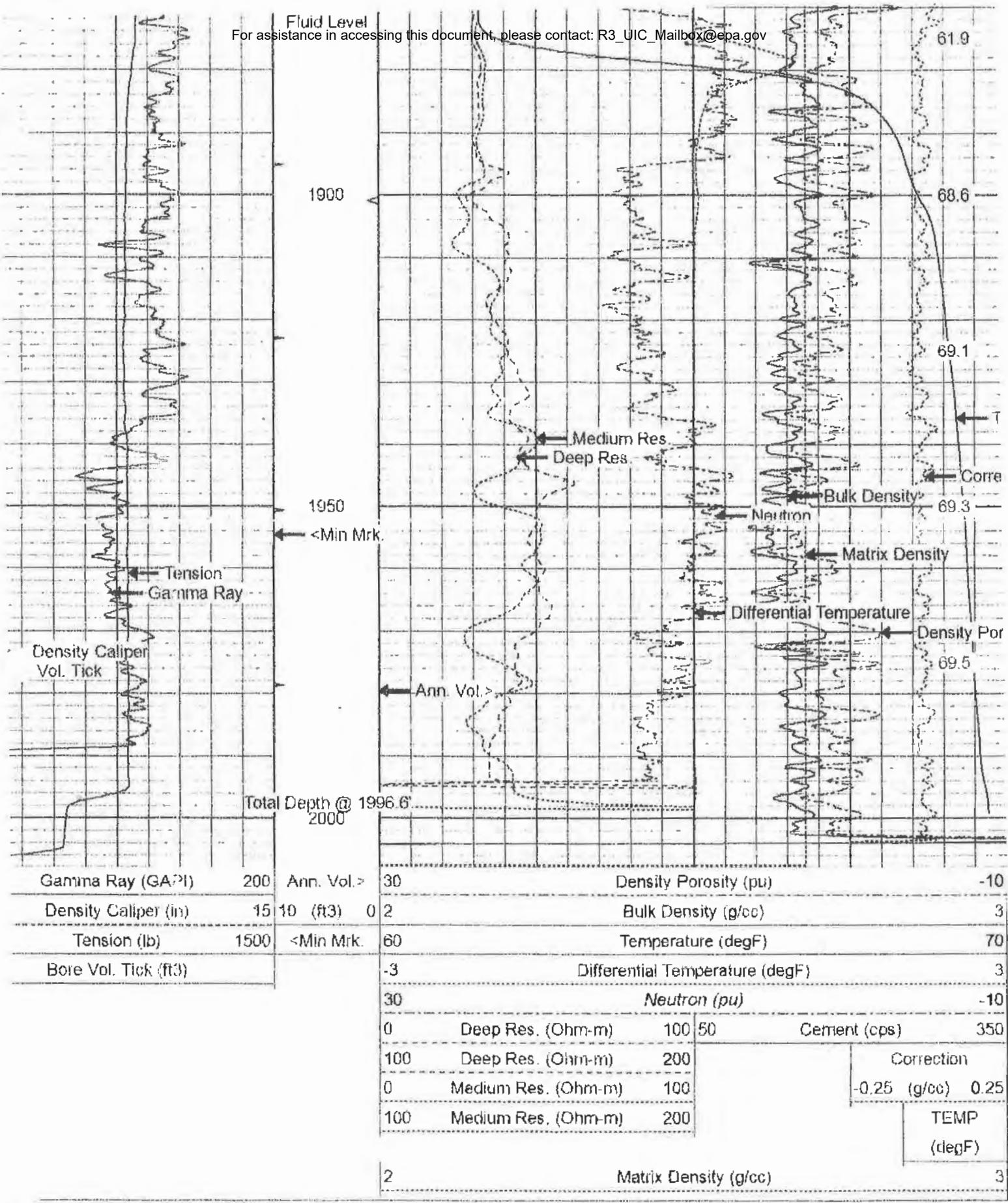
58.0

58.2

58.4







APPENDIX E

Lease Maps

APPENDIX F

Chemical Composition of Injection Fluid



For assistance in accessing this document, please contact: R3_UIC_Mailbox@epa.gov

ce in accessing this document, please contact: R3, U.S. Environmental Protection Agency, Washington, D.C. 20460.

Erie Division

1962 Wager Road • Erie, PA 16509 • Phone: 814-825-8533 • Fax: 814-825-9254

Keith Blanchard, Managing Director • E-mail: eriemm@microbac.com • <http://www.microbac.com>

CERTIFICATE OF ANALYSIS

Work Order Number:

13K1672

Henderson Resource Group LLC
Attn: Michael Henderson
121 Dewey Avenue
Hazel Hurst, PA 16733

Date Reported 12/17/2013
Date Received 11/12/2013
Account Number 000000008226



Purchase Order:

Subject: Holding Tank for Production Water

TEST	METHOD	RESULT	UNITS	PREPARED	ANALYZED	TECH	NOTES
01 Benson Energy							
Sample Date: 11/12/2013				Sample Time: 09:45			
No Sample Available				11/19/13 9:35	11/19/13 9:35	CMC	
Benson Energy							
Sample Grab Taken 11/12/13 @9:45, 9:47, 9:50, 9:51, 9:53							
Sample Date: 11/12/2013				Sample Time: 09:53			
Alkalinity As CaCO ₃	SM2320 B	16.8	mg CaCO ₃ /L	11/14/13 11:51	11/14/13 12:28	BJJ	
Chloride	EPA 300.0, Rv. 2.1	112000	mg/L	11/14/13 19:15	11/14/13 19:15	CP3	
pH	SM4500-H+ B	6.1	Units	11/13/13 15:00	11/13/13 15:00	DJS	H4
Total Dissolved Solids - TDS	SM2540 C (1997)	198000	mg/L	11/19/13 11:00	11/20/13 13:23	MWR	H
Total Suspended Solids - TSS	SM2540 D (1997)	76.0	mg/L	11/14/13 13:20	11/14/13 13:20	CMF	
Conductivity at 25 °C	EPA 120.1	280000	µMHOH/cm	11/13/13 15:00	11/13/13 15:00	CAP	
Specific Gravity	ASTM D1429	1.11		12/17/13 11:16	12/17/13 11:16	CAP	Y
Sulfate	EPA 300.0, Rv. 2.1	709	mg/L	11/13/13 19:58	11/13/13 19:58	CP3	
Barium	EPA 200.7, Rv. 4.4	0.275	mg/L	11/14/13 15:10	11/21/13 15:12	MWR	
Calcium	EPA 200.7, Rv. 4.4	18800	mg/L	11/14/13 10:25	11/25/13 10:26	MWR	
Hardness - Total as CaCO ₃	EPA 200.7, Rv. 4.4	57700	mg/L	11/14/13 10:25	11/25/13 10:26	MWR	
Iron	EPA 200.7, Rv. 4.4	47.6	mg/L	11/14/13 10:25	11/25/13 10:26	MWR	
Magnesium	EPA 200.7, Rv. 4.4	2590	mg/L	11/14/13 10:25	11/25/13 10:26	MWR	
Manganese	EPA 200.7, Rv. 4.4	19.1	mg/L	11/14/13 10:25	11/25/13 10:26	MWR	
Potassium	EPA 200.7, Rv. 4.4	134	mg/L	11/14/13 10:25	11/25/13 10:26	MWR	
Sodium	EPA 200.7, Rv. 4.4	40500	mg/L	11/14/13 10:25	11/25/13 10:26	MWR	
Strontrium	EPA 200.7, Rv. 4.4	362	mg/L	11/14/13 10:44	12/4/13 10:46	MWR	

The data and information on this, and other accompanying documents, represent only the sample(s) analyzed and is rendered upon condition that it is not to be reproduced wholly or in part for advertising or other purposes without approval from the laboratory.

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