

August 7, 2023

CERTIFIED MAIL NO. [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

Re: Water Supply Request for Investigation
DEP Identifier 365452
Positive Determination – 58 Pa. C.S. § 3218
Eldred Township, Warren County

[REDACTED] [REDACTED] [REDACTED]

The Pennsylvania Department of Environmental Protection (“Department”) has completed its investigation of your water supply shown on Figure 1 (attached) (“Water Supply”). Based on the information obtained to date, the Department has determined that your Water Supply was most likely impacted by historical oil and gas operations. The well that was believed to be causing the strong odor and oil in your water has been plugged. The investigation is summarized below.

CASE INFORMATION

Date of Complaint	Nature of Complaint (odor, taste, quantity, use, color, gas)
July 8, 2022	Strong odor and oil observed in water.

INVESTIGATION SUMMARY

On July 4, 2022, you noticed a strong oil or kerosene odor in the Water Supply. You contacted the Department on July 8, 2022 to report these conditions. The Department visited the site on July 19, 2022.

Your Water Supply consists of a drilled well, which is located across the road from your residence in a concrete vault that is four to five feet deep. There is an abandoned oil well (123-48725) two to three feet away from the Water Supply (“Abandoned Well”). You reported that the Water Supply was drilled sometime between 1940-1960 and is approximately 100 feet deep with steel casing to an unknown depth. The pressure tank is also located in the vault and there is a submersible pump in the water well that was reported to be replaced seven to eight years ago. You also have an inline filter in basement and there was oil visible through the filter cover. The water was purged for 15 minutes, and water samples were taken after treatment from the kitchen sink. The

water was cloudy, slightly turbid and had a strong petroleum odor. The petroleum odor got stronger as the water ran.

The Department ran a camera down the Abandoned Well on July 27, 2022. The camera encountered oil at approximately 72 feet below top of casing ("BTOC") and open hole at approximately 375 feet BTOC. The total depth of the Abandoned Well was determined to be approximately 595 feet BTOC. The Department executed an emergency contract to plug the Abandoned Well and two additional abandoned oil wells in the near vicinity.

The Abandoned Well was plugged on October 24, 2022. After the Abandoned Well was plugged, the plugging contractor pumped fluid from the Water Supply to a sealed container in order to try to flush some of the oil from the surrounding aquifer. A new submersible pump and pressure tank were installed in the vault.

The Department visited the site on November 22, 2022 and February 13, 2023 to collect post-plugging water samples from the Water Supply. On each visit, the pressure tank was purged for 10 minutes via a hose prior to collecting samples. The water was clear and had some petroleum odor. No bubbles were observed, and no gas was detected on either visit. However, you reported your water quality was similar to what it was before the Abandoned Well was plugged and was not improving, so you were going contact a well driller to drill a new well. On March 24, 2023, you reported that a new water well was drilled and the water from the new well was of good quality with no indications of oil present.

LABORATORY RESULTS:

Parameter	DEP Sample-Well 7/19/2022 (Pre-plug)	DEP Sample-Well 11/22/2022 (Post-plug)	DEP Sample-Well 2/13/2023 (Post-plug)	DEP Drinking Water MCL/SMCL
Alkalinity (mg/l)	92.4	83.6	20	
Aluminum (ug/l)	945	<15	42.2	200
Arsenic (ug/l)	<3.00	<3.00	<3.00	10
Barium (mg/l)	0.77	0.055	0.022	2
Bromide (mg/l)	0.293	0.247	<0.2	
Calcium (mg/l)	51	37.6	9.02	
Chloride (mg/l)	36.47	32.18	13.04	250
Hardness (mg/l)	167	124	33	
Iron (mg/l)	1.74	<0.100	0.14	0.3
Lithium (ug/l)	<25.0	<25.0	<25.0	
Magnesium (mg/l)	9.54	7.3	2.49	
Manganese (mg/l)	0.046	0.576	0.157	0.05
pH	7.1	6.8	6.3	6.5-8.5
Potassium (mg/l)	1.67	1.46	1.11	
Selenium (ug/l)	<4.00	<4.00	<4.00	50
Sodium (mg/l)	9.23	9.16	5.43	
Conductivity (umhos/cm)	387	301	102.8	
Strontium (mg/l)	0.172	0.131	0.038	
Sulfate (mg/l)	48.32	26.27	9.71	250
TSS (mg/l)	58	<20	<20	
TDS (mg/l)	216	186	78	500
Turbidity (ntu)	24.9	<1	1.37	*1
Zinc (ug/l)	<30.00	<30.00	<30.0	5000
Methane (mg/l)	<0.0116	<0.0116	<0.0116	7
Ethane (mg/l)	<0.0124	<0.0124	<0.0124	
Propane (mg/l)	0.0408	<0.0142	<0.0142	
Oil and Grease (mg/l)	<5.0	NA		

BOLD- Outside of Drinking Water MCL's

* Only applicable to unfiltered surface water sources

** DEP Action Level

NA- Not Analyzed

Prior to plugging the Abandoned Well, aluminum and iron exceeded their respective health and/or aesthetic statewide standards. Specifically, iron was detected at 1.74 mg/L, in exceedance of the Department's Division of Drinking Water Management Secondary Maximum Contaminant Level ("SMCL"). Aluminum was detected at 945 ug/L, in exceedance of its SMCL of 200 ug/L.

After plugging the Abandoned Well, manganese was detected at 0.576 mg/L and 0.157 mg/L, in exceedance of its SMCL of 0.05 mg/L. Additionally, pH was detected just below its recommended range. All of the other parameters have steadily declined from the pre-plugging sample to the most recent post-plugging sample.

Based on observations during the Department's site visits, information provided by you, and the review of relevant documents, the Department determines that the quality of the original Water Supply was impacted by historical oil and gas activity, most likely the Abandoned Well that was plugged. You have drilled a new water well and have reported no issues with your new water supply.

Please contact Alicia Furey at 814-332-6132 if you have any questions about the Department's determination regarding this investigation.

Sincerely,

Scott Dudzic

Scott Dudzic
NWRO District Oil and Gas Manager
District Oil and Gas Operations

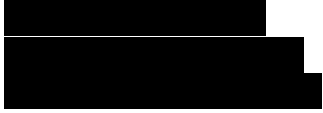
Enclosures: Figure 1
Laboratory Results

cc: Furey (email)
Despenes (email)
Lichtinger (email)

Attachments

CONFIDENTIAL

Figure 1





Date of Issue: 08/04/2022 04:01:14

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9556 004

Date Collected: 07/19/2022 10:15:00 AM

Lab Sample ID: I2022012738

Status: Completed

Name of Sample Collector: Evan T Bruce

Date Received: 07/20/2022

County: Warren

State:

Municipality: Eldred Twp

[Redacted]
[Redacted]
[Redacted]

Sample Medium: Ground Water

Sample Medium Type: Water

Location: SAMPLE TAKEN AT KITCHEN SINK

Reason: Complaint

Project: NOT INDICATED

Standard Anlysis: 946

Matrix: Water

Field Tests		
pH	8	pH units
Temperature	65	F
Specific Conductance	399	umhos/cm

Legal Seal:	1125265	Intact:	Yes
Legal Seal:	1125266	Intact:	Yes

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9556 004

Date Collected: 07/19/2022 10:15:00 AM

Lab Sample ID: I2022012738

Status: Completed

Legal Seal: I125267	Intact: Yes
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Stream Condition:

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY AS CaCO3 @ pH 4.5	92.4 mg/L	07/20/2022 04:12 PM	JAHOUE	SM 2320B
** Comment ** Sample bottle had headspace present before analysis				
01105H ALUMINUM, TOTAL (WATER & WASTE) ICPMS	945.000 ug/L	07/22/2022 03:04 PM	ELEEDY	EPA 200.8
01002H ARSENIC, TOTAL (WATER & WASTE) BY ICPMS	<3.00 ug/L (U)	07/21/2022 11:50 AM	ELEEDY	EPA 200.8
01007M BARIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.077 mg/L	07/25/2022 02:21 PM	CREITMEYER	EPA 200.7
71870 BROMIDE BY ION CHROMATOGRAPHY	0.293 mg/L	07/20/2022 12:20 PM	TVOROBAYCH	EPA 300.0
00916A CALCIUM, TOTAL (WATER & WASTE) BY ICP	51.000 mg/L	07/25/2022 02:21 PM	CREITMEYER	EPA 200.7
00900 HARDNESS, TOTAL (CALCULATED)	167 mg/L	07/25/2022 02:21 PM	CREITMEYER	SM 2340 B
** Comment ** Accredited by NJ only - accreditation not available from PA				
01045M IRON, TOTAL IN MG/L (WATER & WASTE) BY ICP	1.740 mg/L	07/25/2022 02:21 PM	CREITMEYER	EPA 200.7
01132A LITHIUM, TOTAL (WATER & WASTE) BY ICP	<25.0 ug/L (U)	07/25/2022 02:21 PM	CREITMEYER	EPA 200.7
00927A MAGNESIUM, TOTAL (WATER & WASTE) BY ICP	9.54 mg/L	07/25/2022 02:21 PM	CREITMEYER	EPA 200.7
01055M MANGANESE, TOTAL in MG/L (WATER & WASTE) BY ICP	0.046 mg/L	07/25/2022 02:21 PM	CREITMEYER	EPA 200.7
00403 pH, Lab (Electrometric)	7.1 pH units	07/20/2022 04:12 PM	JAHOUE	SM 4500-H+ B
** Comment ** Holding Time Exceeded				
00937A POTASSIUM, TOTAL (WATER & WASTE) BY ICP	1.67 mg/L	07/25/2022 02:21 PM	CREITMEYER	EPA 200.7
01147H SELENIUM, TOTAL (WATER & WASTE) BY ICPMS	<4.00 ug/L (U)	07/21/2022 11:50 AM	ELEEDY	EPA 200.8
00929A SODIUM, TOTAL (WATER & WASTE) BY ICP	9.23 mg/L	07/25/2022 02:21 PM	CREITMEYER	EPA 200.7
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	387.00 umhos/cm	07/27/2022 02:21 PM	MTUZINSKI	SM 2510B
01082M STRONTIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.172 mg/L	07/25/2022 02:21 PM	CREITMEYER	EPA 200.7
00403T Temperature at which pH is measured	20.36 C	07/20/2022 04:12 PM	JAHOUE	SM 4500-H+ B
00940 Total Chloride-Ion Chromatograph	36.47 mg/L	07/27/2022 06:32 PM	TVOROBAYCH	EPA 300.0
70300 TOTAL DISSOLVED SOLIDS @ 180C	216 mg/L	07/20/2022 11:11 AM	JRONEMUS	SM 2540C-15
00945 Total Sulfate-Ion Chromatograph	48.32 mg/L	07/20/2022 12:20 PM	TVOROBAYCH	EPA 300.0
00530 TOTAL SUSPENDED SOLIDS	58 mg/L	07/20/2022 02:45 PM	JRONEMUS	USGS I-3765-85
82079 TURBIDITY, NEPHELMETRIC	24.90 NTU	07/20/2022 12:36 PM	JAHOUE	EPA 180.1
01092A ZINC, TOTAL (WATER & WASTE) BY ICP	<30.0 ug/L (U)	07/25/2022 02:21 PM	CREITMEYER	EPA 200.7

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9556 004

Date Collected: 07/19/2022 10:15:00 AM

Lab Sample ID: I2022012738

Status: Completed

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2016 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.

* denotes tests that the laboratory is not accredited for

U - Indicates analysis was performed for the test but it was not detected. The sample quantitation limit is reported.

J - Indicates an estimated value, reported between Reporting Limit (RL) and Minimum Detection Limit (MDL).

Dr. Pamela Higgins, Technical Director, Bureau of Laboratories



Date of Issue: 07/30/2022 04:10:55

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9556 006

Date Collected: 07/19/2022 10:15:00 AM

Lab Sample ID: O2022002855

Status: Completed

Name of Sample Collector: Evan T Bruce

Date Received: 07/20/2022

County: Warren

State:

Municipality: Eldred Twp

[Redacted]
[Redacted]
[Redacted]

Sample Medium: Ground Water

Sample Medium Type: Water

Location: kitchen sink

Reason: Complaint

Project: NOT INDICATED

Suite: METH

Matrix: Water

Field Tests		
pH	8	pH units
Temperature	65	F
Specific Conductance	399	umhos/cm

Legal Seal:	1125262	Intact:	Yes
Legal Seal:	1125261	Intact:	Yes

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9556 006

Date Collected: 07/19/2022 10:15:00 AM

Lab Sample ID: O2022002855

Status: Completed

Stream Condition:

Sample Lab Comment: Also detected two unkonwm compounds in the boiling rangfe of Butatne

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
74840 Ethane	12.4 ug/L (U)	07/25/2022 02:00 AM	DACLEMENS	BOL BOL6019
74828 Methane	11.6 ug/L (U)	07/25/2022 02:00 AM	DACLEMENS	BOL BOL6019
74986 Propane	40.8 ug/L	07/25/2022 02:00 AM	DACLEMENS	BOL BOL6019

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Dr. Pamela Higgins, Technical Director, Bureau of Laboratories

ORGANICS LABORATORY QUALIFIERS

U - Indicates analysis was performed for the test but it was not detected. The sample quantitation limit is reported.

J - Indicates an estimated value, reported between Reporting Limit (RL) and Minimum Detection Limit (MDL).

N - Indicates presumptive evidence of a compound.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

P - This flag is used with a target analyte when there is greater than a 40% difference between the results obtained from the primary and confirmation columns for dual column analysis methods (e.g. pesticides, triazines, PCBs, etc)

Q - This flag identifies the average of multiple results from multiple analyses, or the average of the averages of dual column analysis methods.

X - Non-target analytes co-elute with compound. Identification unable to be confirmed.



Date of Issue: 07/27/2022 04:05:06

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9556 005

Date Collected: 07/19/2022 10:15:00 AM

Lab Sample ID: I2022012739

Status: Completed

Name of Sample Collector: Evan T Bruce

Date Received: 07/20/2022

County: Warren

State:

Municipality: Eldred Twp



Sample Medium: Ground Water

Sample Medium Type: Water

Location: NOT INDICATED

Reason: Complaint

Project: NOT INDICATED

Standard Anlysis: 200

Matrix: Water

Field Tests		
pH	8	pH units
Temperature	62	F
Specific Conductance	399	umhos/cm

Legal Seal:	1125263	Intact:	Yes
Legal Seal:	1125264	Intact:	Yes

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9556 005

Date Collected: 07/19/2022 10:15:00 AM

Lab Sample ID: I2022012739

Status: Completed

Stream Condition:

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00556H Oil & Grease in water (as Hexane Extractable Material)	<5.0 mg/L (U)	07/21/2022 10:58 AM	SAGREER	EPA 1664A

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J - Indicates an estimated value, reported between Reporting Limit (RL) and Minimum Detection Limit (MDL).

Dr. Pamela Higgins, Technical Director, Bureau of Laboratories



Date of Issue: 03/10/2023 04:05:49

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 012

Date Collected: 11/22/2022 09:08:00 AM

Lab Sample ID: I2022020582

Status: Completed

Name of Sample Collector: Alicia M Furey

Date Received: 11/23/2022

County: Warren

State:

Municipality: Eldred Twp

██████████
██████████.

Sample Medium: Ground Water

Sample Medium Type: Water

Location: NOT INDICATED

Reason: Complaint

Project: NOT INDICATED

Standard Analysis: 946

Matrix: Water

Field Tests		
pH	7.21	pH units

Stream Condition:

Sample Comment: field pH: 7.21 Post plugging

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9550 012

Date Collected: 11/22/2022 09:08:00 AM

Lab Sample ID: I2022020582

Status: Completed

Appearance: clear, some sediment, no gas detected, peto odor

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY AS CaCO3 @ pH 4.5	83.6 mg/L	11/23/2022 02:51 PM	JAHOUE	SM 2320B
** Comment ** Sample bottle had headspace present before analysis				
01105H ALUMINUM, TOTAL (WATER & WASTE) ICPMS	<15.0 ug/L (U)	11/30/2022 10:57 AM	ELEEDY	EPA 200.8
01002H ARSENIC, TOTAL (WATER & WASTE) BY ICPMS	<3.00 ug/L (U)	11/30/2022 10:57 AM	ELEEDY	EPA 200.8
01007M BARIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.055 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
71870 BROMIDE BY ION CHROMATOGRAPHY	0.247 mg/L	11/23/2022 04:58 PM	TVOROBAYCH	EPA 300.0
00916A CALCIUM, TOTAL (WATER & WASTE) BY ICP	37.600 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
00900 HARDNESS, TOTAL (CALCULATED)	124 mg/L	11/30/2022 12:10 PM	CREITMEYER	SM 2340 B
** Comment ** Accredited by NJ only - accreditation not available from PA				
01045M IRON, TOTAL IN MG/L (WATER & WASTE) BY ICP	<0.100 mg/L (U)	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
01132A LITHIUM, TOTAL (WATER & WASTE) BY ICP	<25.0 ug/L (U)	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
00927A MAGNESIUM, TOTAL (WATER & WASTE) BY ICP	7.30 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
01055M MANGANESE, TOTAL in MG/L (WATER & WASTE) BY ICP	0.576 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
00403 pH, Lab (Electrometric)	6.8 pH units	11/23/2022 02:51 PM	JAHOUE	SM 4500-H+ B
** Comment ** Holding Time Exceeded				
00937A POTASSIUM, TOTAL (WATER & WASTE) BY ICP	1.46 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
01147H SELENIUM, TOTAL (WATER & WASTE) BY ICPMS	<4.00 ug/L (U)	11/30/2022 10:57 AM	ELEEDY	EPA 200.8
00929A SODIUM, TOTAL (WATER & WASTE) BY ICP	9.16 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	301.00 umhos/cm	11/28/2022 05:54 PM	MTUZINSKI	SM 2510B
01082M STRONTIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.131 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
00403T Temperature at which pH is measured	19.61 C	11/23/2022 02:51 PM	JAHOUE	SM 4500-H+ B
00940 Total Chloride-Ion Chromatograph	32.18 mg/L	11/23/2022 04:58 PM	TVOROBAYCH	EPA 300.0
70300 TOTAL DISSOLVED SOLIDS @ 180C	186 mg/L	12/14/2022 11:28 AM	JMULHOLLEM	SM 2540C-15
** Comment ** Standard out of range				
008 Holding time exceeded				
00945 Total Sulfate-Ion Chromatograph	26.27 mg/L	11/23/2022 04:58 PM	TVOROBAYCH	EPA 300.0
00530 TOTAL SUSPENDED SOLIDS	<20 mg/L (U)	11/23/2022 12:17 PM	ANFRIEDLIN	USGS I-3765-85
82079 TURBIDITY, NEPHELMETRIC	<1 NTU (U)	11/23/2022 10:45 AM	JAHOUE	EPA 180.1
01092A ZINC, TOTAL (WATER & WASTE) BY ICP	<30.0 ug/L (U)	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9550 012

Date Collected: 11/22/2022 09:08:00 AM

Lab Sample ID: I2022020582

Status: Completed

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2016 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.

* denotes tests that the laboratory is not accredited for

U - Indicates analysis was performed for the test but it was not detected. The sample quantitation limit is reported.

J - Indicates an estimated value, reported between Reporting Limit (RL) and Minimum Detection Limit (MDL).

Jennifer Fesler, Technical Director, Bureau of Laboratories



Date of Issue: 03/10/2023 04:09:51

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 013

Date Collected: 02/13/2023 09:34:00 AM

Lab Sample ID: I2023002269

Status: Completed

Name of Sample Collector: Alicia M Furey

Date Received: 02/14/2023

County: NOT INDICATED

State:

Municipality: NOT INDICATED

Location: NOT INDICATED

Reason: Complaint

Project: NOT INDICATED

Standard Anlysis: 946

Matrix: Water

Stream Condition:

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY AS CaCO3 @ pH 4.5	20.0 mg/L	02/14/2023 12:37 PM	JAHOUE	SM 2320B
** Comment ** Sample bottle had headspace present before analysis				
01105H ALUMINUM, TOTAL (WATER & WASTE) ICPMS	42.200 ug/L	02/15/2023 10:58 AM	ELEEDY	EPA 200.8
01002H ARSENIC, TOTAL (WATER & WASTE) BY ICPMS	<3.00 ug/L (U)	02/15/2023 10:58 AM	ELEEDY	EPA 200.8
01007M BARIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.022 mg/L	02/16/2023 12:11 PM	CREITMEYER	EPA 200.7
71870 BROMIDE BY ION CHROMATOGRAPHY	<0.2 mg/L (U)	02/14/2023 06:30 PM	TVOROBAYCH	EPA 300.0
00916A CALCIUM, TOTAL (WATER & WASTE) BY ICP	9.020 mg/L	02/16/2023 12:11 PM	CREITMEYER	EPA 200.7

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9550 013

Date Collected: 02/13/2023 09:34:00 AM

Lab Sample ID: I2023002269

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00900 HARDNESS, TOTAL (CALCULATED)	33 mg/L	02/16/2023 12:11 PM	CREITMEYER	SM 2340 B
** Comment ** Accredited by NJ only - accreditation not available from PA				
01045M IRON, TOTAL IN MG/L (WATER & WASTE) BY ICP	0.140 mg/L	02/16/2023 12:11 PM	CREITMEYER	EPA 200.7
01132A LITHIUM, TOTAL (WATER & WASTE) BY ICP	<25.0 ug/L (U)	02/16/2023 12:11 PM	CREITMEYER	EPA 200.7
00927A MAGNESIUM, TOTAL (WATER & WASTE) BY ICP	2.49 mg/L	02/16/2023 12:11 PM	CREITMEYER	EPA 200.7
01055M MANGANESE, TOTAL in MG/L (WATER & WASTE) BY ICP	0.157 mg/L	02/16/2023 12:11 PM	CREITMEYER	EPA 200.7
00403 pH, Lab (Electrometric)	6.3 pH units	02/14/2023 12:37 PM	JAHOUE	SM 4500-H+ B
** Comment ** Holding Time Exceeded				
00937A POTASSIUM, TOTAL (WATER & WASTE) BY ICP	1.11 mg/L	02/16/2023 12:11 PM	CREITMEYER	EPA 200.7
01147H SELENIUM, TOTAL (WATER & WASTE) BY ICPMS	<4.00 ug/L (U)	02/15/2023 10:58 AM	ELEEDY	EPA 200.8
00929A SODIUM, TOTAL (WATER & WASTE) BY ICP	5.43 mg/L	02/16/2023 12:11 PM	CREITMEYER	EPA 200.7
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	102.80 umhos/cm	03/01/2023 06:35 PM	MTUZINSKI	SM 2510B
01082M STRONTIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.038 mg/L	02/16/2023 12:11 PM	CREITMEYER	EPA 200.7
00403T Temperature at which pH is measured	20.07 C	02/14/2023 12:37 PM	JAHOUE	SM 4500-H+ B
00940 Total Chloride-Ion Chromatograph	13.04 mg/L	02/14/2023 06:30 PM	TVOROBAYCH	EPA 300.0
70300 TOTAL DISSOLVED SOLIDS @ 180C	78 mg/L	02/14/2023 01:25 PM	JMULHOLLEM	SM 2540C-15
00945 Total Sulfate-Ion Chromatograph	9.71 mg/L	02/14/2023 06:30 PM	TVOROBAYCH	EPA 300.0
00530 TOTAL SUSPENDED SOLIDS	<20 mg/L (U)	02/14/2023 08:46 AM	CLONTZ	USGS I-3765-85
82079 TURBIDITY, NEPHELMETRIC	1.37 NTU	02/14/2023 11:16 AM	JAHOUE	EPA 180.1
01092A ZINC, TOTAL (WATER & WASTE) BY ICP	<30.0 ug/L (U)	02/16/2023 12:11 PM	CREITMEYER	EPA 200.7

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2016 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.

* denotes tests that the laboratory is not accredited for

U - Indicates analysis was performed for the test but it was not detected. The sample quantitation limit is reported.

J - Indicates an estimated value, reported between Reporting Limit (RL) and Minimum Detection Limit (MDL).

Jennifer Fesler, Technical Director, Bureau of Laboratories



Date of Issue: 10/29/2022 04:09:57

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 008

Date Collected: 08/08/2022 08:13:00 AM

Lab Sample ID: O2022003091

Status: Completed

Name of Sample Collector: Alicia M Furey

Date Received: 08/09/2022

County: Warren

State:

Municipality: Eldred Twp

[REDACTED]
[REDACTED]
[REDACTED]

Sample Medium: Ground Water

Sample Medium Type: Water

Location: inline filter connection, before treatment

Reason: Complaint

Project: NOT INDICATED

Suite: VOASW

Matrix: Water

Field Tests		
pH	7.12	pH units

Stream Condition:

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9550 008

Date Collected: 08/08/2022 08:13:00 AM

Lab Sample ID: O2022003091

Status: Completed

Sample Comment: clear, strong petroleum odor, no gas via jar, no bubbles

Sample Lab Comment: TICs: many straight chain and multiple substituted alkanes from C4-C10, some multiple substituted cycloalkanes, some multiple substituted alkenes, many substituted benzenes

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
630206 1,1,1,2-Tetrachloroethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
71556 1,1,1-Trichloroethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
79345 1,1,1,2-Tetrachloroethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
79005 1,1,2-Trichloroethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75343 1,1-Dichloroethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75354 1,1-Dichloroethene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
563586 1,1-Dichloropropene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
87616 1,2,3-Trichlorobenzene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
96184 1,2,3-Trichloropropane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
120821 1,2,4-Trichlorobenzene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
95636 1,2,4-Trimethylbenzene	122 ug/L (Q)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
96128 1,2-Dibromo-3-chloropropane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
106934 1,2-Dibromoethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
95501 1,2-Dichlorobenzene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
107062 1,2-Dichloroethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
78875 1,2-Dichloropropane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108678 1,3,5-Trimethylbenzene	65.0 ug/L (Q)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
541731 1,3-Dichlorobenzene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
142289 1,3-Dichloropropane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
106467 1,4-Dichlorobenzene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
594207 2,2-Dichloropropane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
78933 2-Butanone	2.5 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
591786 2-Hexanone	2.5 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
99876 4-Isopropyltoluene	2.4 ug/L	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108101 4-Methyl-2-pentanone	2.5 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
67641 Acetone	6.0 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
71432 Benzene	6.3 ug/L (Q)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108861 Bromobenzene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
74975 Bromochloromethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75274 Bromodichloromethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75252 Bromoform	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
74839 Bromomethane	0.60 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9550 008

Date Collected: 08/08/2022 08:13:00 AM

Lab Sample ID: O2022003091

Status: Completed

Test Codes / CAS # - Description		Reported Results	Date And Time Analyzed	Approved by	Test Method
75150	Carbon disulfide	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
56235	Carbon tetrachloride	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108907	Chlorobenzene	1.5 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75003	Chloroethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75014	Chloroethene (vinyl chloride)	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
67663	Chloroform	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
74873	Chloromethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
156592	cis-1,2-Dichloroethene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
10061015	cis-1,3-Dichloropropene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
124481	Dibromochloromethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
74953	Dibromomethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75718	Dichlorodifluoromethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75092	Dichloromethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
100414	Ethylbenzene	58.8 ug/L (Q)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
	EXTRACTED DATE		08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
	EXTRACTED TIME		08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
87683	Hexachlorobutadiene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
98828	Isopropylbenzene	7.0 ug/L (Q)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108383	m/p-Xylenes	520 ug/L (Q)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
1634044	Methyl-tert-butyl Ether	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
91203	Naphthalene	6.2 ug/L (Q)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
104518	n-Butylbenzene	3.4 ug/L	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
103651	n-Propylbenzene	7.3 ug/L (Q)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
95498	o-Chlorotoluene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
95476	o-Xylene	99.6 ug/L (Q)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
106434	p-Chlorotoluene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
98566	PCTFB	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
135988	Sec-Butylbenzene	1.6 ug/L	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
100425	Styrene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75650	t-Butyl alcohol	11.2 ug/L	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
540885	tert-Butyl Acetate	2.5 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
98066	Tert-Butylbenzene	0.90 ug/L	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
127184	Tetrachloroethene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
109999	Tetrahydrofuran	1.5 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108883	Toluene	5.1 ug/L	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
1330207	Total Xylenes	619.6 ug/L	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 008

Date Collected: 08/08/2022 08:13:00 AM

Lab Sample ID: O2022003091

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
156605 trans-1,2-Dichloroethene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
10061026 trans-1,3-Dichloropropene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
79016 Trichloroethene	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75694 Trichlorofluoromethane	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108054 Vinyl Acetate	0.50 ug/L (U)	08/10/2022 02:00 AM	ANDSCHMIDT	EPA 8260D

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2016 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.
* denotes tests that the laboratory is not accredited for

U - Indicates analysis was performed for the test but it was not detected. The sample quantitation limit is reported.

J - Indicates an estimated value, reported between Reporting Limit (RL) and Minimum Detection Limit (MDL).

Dr. Pamela Higgins, Technical Director, Bureau of Laboratories

ORGANICS LABORATORY QUALIFIERS

U - Indicates analysis was performed for the test but it was not detected. The sample quantitation limit is reported.

J - Indicates an estimated value, reported between Reporting Limit (RL) and Minimum Detection Limit (MDL).

N - Indicates presumptive evidence of a compound.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

P - This flag is used with a target analyte when there is greater than a 40% difference between the results obtained from the primary and confirmation columns for dual column analysis methods (e.g. pesticides, triazines, PCBs, etc)

Q - This flag identifies the average of multiple results from multiple analyses, or the average of the averages of dual column analysis methods.

X - Non-target analytes co-elute with compound. Identification unable to be confirmed.



Date of Issue: 10/29/2022 04:12:12

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 009

Date Collected: 08/08/2022 08:28:00 AM

Lab Sample ID: O2022003092

Status: Completed

Name of Sample Collector: Alicia M Furey

Date Received: 08/09/2022

County: Warren

State:

Municipality: Eldred Twp

██████████
██████████
██████████

Sample Medium: Oil

Sample Medium Type: Oil

Location: NOT INDICATED

Reason: Complaint

Project: NOT INDICATED

Suite: VOASW

Matrix: C.O.W.S.

Stream Condition:

Sample Comment: oil

Sample Lab Comment: TICs: many straight chain and multiple substituted alkanes from C4-C13, some multiple substituted cycloalkanes, some multiple substituted alkenes, many substituted benzenes, some multiple substituted naphthalenes

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9550 009

Date Collected: 08/08/2022 08:28:00 AM

Lab Sample ID: O2022003092

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
630206 1,1,1,2-Tetrachloroethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
71556 1,1,1-Trichloroethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
79345 1,1,2,2-Tetrachloroethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
79005 1,1,2-Trichloroethane	452000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75343 1,1-Dichloroethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75354 1,1-Dichloroethene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
563586 1,1-Dichloropropene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
87616 1,2,3-Trichlorobenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
96184 1,2,3-Trichloropropane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
120821 1,2,4-Trichlorobenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
95636 1,2,4-Trimethylbenzene	2200000 ug/L	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
96128 1,2-Dibromo-3-chloropropane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
106934 1,2-Dibromoethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
95501 1,2-Dichlorobenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
107062 1,2-Dichloroethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
78875 1,2-Dichloropropane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108678 1,3,5-Trimethylbenzene	1190000 ug/L	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
541731 1,3-Dichlorobenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
142289 1,3-Dichloropropane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
106467 1,4-Dichlorobenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
594207 2,2-Dichloropropane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
78933 2-Butanone	1130000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
591786 2-Hexanone	1130000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
99876 4-Isopropyltoluene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108101 4-Methyl-2-pentanone	1130000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
67641 Acetone	1130000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
71432 Benzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108861 Bromobenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
74975 Bromochloromethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75274 Bromodichloromethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75252 Bromoform	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
74839 Bromomethane	407000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75150 Carbon disulfide	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
56235 Carbon tetrachloride	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108907 Chlorobenzene	498000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75003 Chloroethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9550 009

Date Collected: 08/08/2022 08:28:00 AM

Lab Sample ID: O2022003092

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
75014 Chloroethene (vinyl chloride)	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
67663 Chloroform	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
74873 Chloromethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
156592 cis-1,2-Dichloroethene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
10061015 cis-1,3-Dichloropropene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
124481 Dibromochloromethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
74953 Dibromomethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75718 Dichlorodifluoromethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75092 Dichloromethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
100414 Ethylbenzene	324000 ug/L	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
EXTRACTED DATE	08102022 Day	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
EXTRACTED TIME	1037	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
87683 Hexachlorobutadiene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
98828 Isopropylbenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108383 m/p-Xylenes	2850000 ug/L	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
1634044 Methyl-tert-butyl Ether	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
91203 Naphthalene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
104518 n-Butylbenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
103651 n-Propylbenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
95498 o-Chlorotoluene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
95476 o-Xylene	422000 ug/L	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
106434 p-Chlorotoluene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
98566 PCTFB	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
135988 Sec-Butylbenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
100425 Styrene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
75650 t-Butyl alcohol	2260000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
540885 tert-Butyl Acetate	1130000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
Continuing calibration recoveries low. Results and/or reporting limits may be biased low. Matrix spike recoveries low. Results and/or reporting limits may be biased low.				
98066 Tert-Butylbenzene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
127184 Tetrachloroethene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
109999 Tetrahydrofuran	272000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108883 Toluene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
1330207 Total Xylenes	3272000 ug/L	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
156605 trans-1,2-Dichloroethene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
10061026 trans-1,3-Dichloropropene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
79016 Trichloroethene	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 009

Date Collected: 08/08/2022 08:28:00 AM

Lab Sample ID: O2022003092

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
75694 Trichlorofluoromethane	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D
108054 Vinyl Acetate	226000 ug/L (U)	08/11/2022 02:00 AM	ANDSCHMIDT	EPA 8260D

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* denotes tests that the laboratory is not accredited for

U - Indicates analysis was performed for the test but it was not detected. The sample quantitation limit is reported.

J - Indicates an estimated value, reported between Reporting Limit (RL) and Minimum Detection Limit (MDL).

Dr. Pamela Higgins, Technical Director, Bureau of Laboratories

ORGANICS LABORATORY QUALIFIERS

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J - Indicates an estimated value, reported between Reporting Limit (RL) and Minimum Detection Limit (MDL).

N - Indicates presumptive evidence of a compound.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

P - This flag is used with a target analyte when there is greater than a 40% difference between the results obtained from the primary and confirmation columns for dual column analysis methods (e.g. pesticides, triazines, PCBs, etc)

Q - This flag identifies the average of multiple results from multiple analyses, or the average of the averages of dual column analysis methods.

X - Non-target analytes co-elute with compound. Identification unable to be confirmed.



Date of Issue: 03/05/2023 04:06:29

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 013

Date Collected: 02/13/2023 09:34:00 AM

Lab Sample ID: O2023000158

Status: Completed

Name of Sample Collector: Alicia M Furey

Date Received: 02/14/2023

County: NOT INDICATED

State:

Municipality: NOT INDICATED

Location: NOT INDICATED

Reason: Complaint

Project: NOT INDICATED

Suite: METH

Matrix: Water

Stream Condition:

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
74840 Ethane	12.4 ug/L (U)	02/14/2023 02:00 AM	DACLEMENS	BOL BOL6019
74828 Methane	11.6 ug/L (U)	02/14/2023 02:00 AM	DACLEMENS	BOL BOL6019
74986 Propane	14.2 ug/L (U)	02/14/2023 02:00 AM	DACLEMENS	BOL BOL6019

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 013

Date Collected: 02/13/2023 09:34:00 AM

Lab Sample ID: O2023000158

Status: Completed

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2016 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.

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Jennifer Fesler, Technical Director, Bureau of Laboratories

ORGANICS LABORATORY QUALIFIERS

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Q - This flag identifies the average of multiple results from multiple analyses, or the average of the averages of dual column analysis methods.

X - Non-target analytes co-elute with compound. Identification unable to be confirmed.



Date of Issue: 01/03/2023 01:52:21

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 012

Date Collected: 11/22/2022 09:08:00 AM

Lab Sample ID: I2022020582

Status: IN PROCESS

Name of Sample Collector: Alicia M Furey

Date Received: 11/23/2022

County: Warren

State:

Municipality: Eldred Twp

[REDACTED]

[REDACTED]

Sample Medium: Ground Water

Sample Medium Type: Water

Location: NOT INDICATED

Reason: Complaint

Project: NOT INDICATED

Standard Analysis: 946

Matrix: Water

Field Tests		
pH	7.21	pH units

Stream Condition:

Sample Comment: field pH: 7.21 Post plugging

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9550 012

Date Collected: 11/22/2022 09:08:00 AM

Lab Sample ID: I2022020582

Status: IN PROCESS

Appearance: clear, some sediment, no gas detected, peto odor

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY AS CaCO3 @ pH 4.5	83.6 mg/L	11/23/2022 02:51 PM	JAHOUE	SM 2320B
01105H ALUMINUM, TOTAL (WATER & WASTE) ICPMS	<15.0 ug/L (U)	11/30/2022 10:57 AM	ELEEDY	EPA 200.8
01002H ARSENIC, TOTAL (WATER & WASTE) BY ICPMS	<3.00 ug/L (U)	11/30/2022 10:57 AM	ELEEDY	EPA 200.8
01007M BARIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.055 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
71870 BROMIDE BY ION CHROMATOGRAPHY	0.247 mg/L	11/23/2022 04:58 PM	TVOROBAYCH	EPA 300.0
00916A CALCIUM, TOTAL (WATER & WASTE) BY ICP	37.600 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
00900 HARDNESS, TOTAL (CALCULATED)	124 mg/L	11/30/2022 12:10 PM	CREITMEYER	SM 2340 B
01045M IRON, TOTAL IN MG/L (WATER & WASTE) BY ICP	<0.100 mg/L (U)	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
01132A LITHIUM, TOTAL (WATER & WASTE) BY ICP	<25.0 ug/L (U)	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
00927A MAGNESIUM, TOTAL (WATER & WASTE) BY ICP	7.30 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
01055M MANGANESE, TOTAL in MG/L (WATER & WASTE) BY ICP	0.576 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
00403 pH, Lab (Electrometric)	6.8 pH units	11/23/2022 02:51 PM	JAHOUE	SM 4500-H+ B
00937A POTASSIUM, TOTAL (WATER & WASTE) BY ICP	1.46 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
01147H SELENIUM, TOTAL (WATER & WASTE) BY ICPMS	<4.00 ug/L (U)	11/30/2022 10:57 AM	ELEEDY	EPA 200.8
00929A SODIUM, TOTAL (WATER & WASTE) BY ICP	9.16 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	301.00 umhos/cm	11/28/2022 05:54 PM	MTUZINSKI	SM 2510B
01082M STRONTIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.131 mg/L	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7
00403T Temperature at which pH is measured	19.61 C	11/23/2022 02:51 PM	JAHOUE	SM 4500-H+ B
00940 Total Chloride-Ion Chromatograph	32.18 mg/L	11/23/2022 04:58 PM	TVOROBAYCH	EPA 300.0
00945 Total Sulfate-Ion Chromatograph	26.27 mg/L	11/23/2022 04:58 PM	TVOROBAYCH	EPA 300.0
00530 TOTAL SUSPENDED SOLIDS	<20 mg/L (U)	11/23/2022 12:17 PM	ANFRIEDLIN	USGS I-3765-85
82079 TURBIDITY, NEPHELMETRIC	<1 NTU (U)	11/23/2022 10:45 AM	JAHOUE	EPA 180.1
01092A ZINC, TOTAL (WATER & WASTE) BY ICP	<30.0 ug/L (U)	11/30/2022 12:10 PM	CREITMEYER	EPA 200.7

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Jennifer Fesler, Technical Director, Bureau of Laboratories



Date of Issue: 01/03/2023 01:52:31

DEP Bureau of Laboratories - Harrisburg
P.O. Box 1467
2575 Interstate Drive
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

NELAP - accredited by

NJ DEP - Laboratory Number: PA059
PA DEP LAP - DEP Lab ID: 22-00223

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 012

Date Collected: 11/22/2022 09:08:00 AM

Lab Sample ID: O2022004061

Status: Completed

Name of Sample Collector: Alicia M Furey

Date Received: 11/23/2022

County: Warren

State:

Municipality: Eldred Twp

[REDACTED]

[REDACTED]

Sample Medium: Ground Water

Sample Medium Type: Water

Location: NOT INDICATED

Reason: Complaint

Project: NOT INDICATED

Suite: METH

Matrix: Water

Field Tests		
pH	7.21	pH units

Stream Condition:

Sample Comment: field pH: 7.21 Post plugging

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9550 012

Date Collected: 11/22/2022 09:08:00 AM

Lab Sample ID: O2022004061

Status: Completed

Appearance: clear, some sediment, no gas detected, peto odor

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
74840 Ethane	12.4 ug/L (U)	11/23/2022 02:00 AM	DACLEMENS	BOL BOL6019
74828 Methane	11.6 ug/L (U)	11/23/2022 02:00 AM	DACLEMENS	BOL BOL6019
74986 Propane	14.2 ug/L (U)	11/23/2022 02:00 AM	DACLEMENS	BOL BOL6019

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X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

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