

August 22, 2022

CERTIFIED MAIL NO. [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

Re: Water Supply Request for Investigation
DEP Identifier: 362692
Positive Determination -- 58 Pa. C.S § 3218
Connoquenessing Township, Butler County

[REDACTED] [REDACTED]

The Department has completed its investigation of your water supply listed in Exhibit A (“Water Supply”). Based on the sample results and other information obtained to date, the Department has determined that the 500-foot-deep Water Supply was adversely affected by historic oil and gas activities, including but not limited to the drilling, alteration, or operation of an oil or gas well. This information is summarized below.

CASE INFORMATION:

Date of Complaint	Nature of Complaint (odor, taste, quantity, use, color)	Sample Results Above Statewide Standards
March 3, 2022	Air accumulating in the home plumbing system, ...maybe caused by natural gas...	Methane 37 mg/l (7 mg/l action level) Chloride 585 mg/l (250 mg/l std) Iron 5.82 mg/l (0.3 mg/l std) Suspended Solids 46 mg/l (20 mg/l std) Manganese 0.185 mg/l (0.05 mg/l std)

INVESTIGATION SUMMARY:

The Department was contacted by you on initially on March 3, 2022 after you had perceived change in the quality of your residential well water beginning in October of 2021. You explained that air seemed to be accumulating in the plumbing system. Local water well driller Meinert Drilling was contacted and investigated the issue. It was found that methane gas was in the 500-foot-deep water well. You explained that there also was staining on the fixtures of the home. Sediment then started to appear in the water also. The residence has a softener and in-line sediment filter for treatment and was utilized alternately with the original well on the property, a 165-foot-deep well, to mitigate issues with low quantity.

A Water Quality Specialist (WQS) performed an on-site investigation March 8, 2022 of the 500-foot-deep water well. Gas levels above the lower explosive limit were noted to be in the headspace of a container of water at greater than 50% LEL, while the headspace the water well before and after sampling was zero. These gas readings were mimicked during my sampling of the 500-foot-deep water well for an isotopic sample obtained on April 6, 2022. Isotopic analyses revealed that the gas plots inside the thermogenic gas boundary on the characterization plot.

Therefore, the Department believes that the gas is sourced from an oil or gas well, such as those abandoned wells shown on maps in close proximity.

The Water Supply's inorganic results show elevated iron and manganese, which is expected, as the water well intercepts eight coal seams. Because the results show brackish water, and the water has gas associated with it, this confirms the likelihood of the gas coming from a historic, nearby abandoned oil or gas well.

Due to the issues with gas in the deep water well on the property, the Department also checked the shallow (165-foot-deep) water well to be certain that it did not have any affect from gas. It did show similar water quality in the way of iron and manganese, but only showed a minor amount of gas in it well below the Department's action level. It did not show the elevated chloride, sodium, and conductivity that the deep well did. Volatile organic compounds were tested on this well due to its faint but distinct smell of crude oil. A minor amount of Chloroform was noted in the analyses results, but it was far below the maximum contaminant level allowed.

ANALYSES TABLE:

Contaminant or Parameter	Unit	Drinking Water Standards	Department	Department
			Sample Result [03/08/22]	Sample Result [04/14/22]
			Raw Water 500' ww	Raw Water 165' ww
CHLORIDE	MG/L	250	585.31	33.99
SELENIUM	UG/L	50	6.71	<4.0
TURBIDITY	NTU	none	47.55	30
pH	pH units	6.5 – 8.5	8.1	7.4
ALKALINITY	MG/L	none	245.8	164.8
SPC @ 25.0 C	umhos/cm	none	2240	420
MAGNESIUM	MG/L	none	9.78	9.68
IRON	MG/L	0.3	5.82	5.18
ALUMINUM	UG/L	200	104	<15.0
Hardness	MG/L	none	151	186
ARSENIC	UG/L	10	3.37	<3.0
CALCIUM	MG/L	none	44.4	58.5
POTASSIUM	MG/L	none	1.92	1.4
LITHIUM	UG/L	none	< 25.0 (ND)	<25.0
SODIUM	MG/L	none	418	18.2
SULFATE - IC	MG/L	250	3.48	7.54
TDS @180 C	MG/L	500	306	234
T SUSP SOLID	MG/L	none	46	<0.20
ZINC	UG/L	5000	< 30.0	<30.0
BROMIDE	MG/L	none	4.629	0.256
MANGANESE	MG/L	0.05	0.185	0.238
BARIUM	MG/L	2	1.27	0.765
STRONTIUM	MG/L	none	1.09	0.247
ETHANE	MG/L	none	0.0539	0.0124 (ND)
METHANE	MG/L	7 (action level)	37	0.98
PROPANE	MG/L	none	< 0.0142 (ND)	<0.0142 (ND)
OIL AND GREASE	MG/L	none	< 5.0 (ND)	NS
VOLATILE ORGANICS	UG/L *(80 for Chloroform)	various	NS	1.18 (Chloroform*)
ND=not detected; NS=not sampled;				

There are 21 abandoned oil and gas wells that are to be plugged in the area funded by the Infrastructure Investment and Jobs Act. Department staff will continue to randomly sample your Water Supply and others in your area to monitor the remediation of the local aquifer. Thank you for your patience in this matter. Please contact Christine Miner at 824.573.3592 if you have any questions about the Department's determination, or if your water changes in any way.

Sincerely,



Richard L. Neville
Northwest District Oil and Gas Manager
District Oil and Gas Operations

Enclosures:

Exhibit A, Laboratory Analyses, Fact Sheet-Interpreting Water Supply Results, Methane in WW

Cc: Lux/Johnson (via email)
Lichtinger/Miner (via email)

EXHIBIT A

Water Supply Location:



Evans City, PA 16033



Date of Issue: 03/30/2022 04:22:48

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: 3398 029

Date Collected: 03/08/2022 10:15:00 AM

Lab Sample ID: I2022003295

Status: Completed

Name of Sample Collector: Brady Johnson

Date Received: 03/09/2022

County: Butler

State:

Municipality: Connoquenessing Twp

[REDACTED]
[REDACTED]
EVANS CITY PA. 16033

Sample Medium: Water

Sample Medium Type: Water

Location: NOT INDICATED

Reason: Complaint

Project: NOT INDICATED

Standard Anlysis: 946

Matrix: Water

Legal Seal:	H023652	Intact:	Yes
Legal Seal:	H023649	Intact:	Yes
Legal Seal:	H023650	Intact:	Yes
Legal Seal:	H023651	Intact:	Yes
Legal Seal:	H023647	Intact:	Yes
Legal Seal:	H023648	Intact:	Yes
Legal Seal:	H023653	Intact:	Yes

Analytical Report For
Oil And Gas Mgmt

Sample ID: 3398 029

Date Collected: 03/08/2022 10:15:00 AM

Lab Sample ID: I2022003295

Status: Completed

Stream Condition:

Appearance: Water was effervescent and cloudy with sediment.

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY AS CaCO3 @ pH 4.5	245.8 mg/L	03/09/2022 01:10 PM	JAHOUE	SM 2320B
** Comment ** Sample bottle had headspace present before analysis				
01105H ALUMINUM, TOTAL (WATER & WASTE) ICPMS	104.000 ug/L	03/11/2022 10:13 AM	SCHOY	EPA 200.8
01002H ARSENIC, TOTAL (WATER & WASTE) BY ICPMS	3.370 ug/L	03/11/2022 01:58 PM	SCHOY	EPA 200.8
01007M BARIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	1.270 mg/L	03/14/2022 09:39 AM	CREITMEYER	EPA 200.7
71870 BROMIDE BY ION CHROMATOGRAPHY	4.629 mg/L	03/09/2022 03:09 PM	TVOROBAYCH	EPA 300.0
00916A CALCIUM, TOTAL (WATER & WASTE) BY ICP	44.400 mg/L	03/14/2022 09:39 AM	CREITMEYER	EPA 200.7
00900 HARDNESS, TOTAL (CALCULATED)	151 mg/L	03/14/2022 09:39 AM	CREITMEYER	SM 2340 B
** Comment ** Accredited by NJ only - accreditation not available from PA				
01045M IRON, TOTAL IN MG/L (WATER & WASTE) BY ICP	5.820 mg/L	03/14/2022 09:39 AM	CREITMEYER	EPA 200.7
01132A LITHIUM, TOTAL (WATER & WASTE) BY ICP	<25.0 ug/L (U)	03/14/2022 09:39 AM	CREITMEYER	EPA 200.7
00927A MAGNESIUM, TOTAL (WATER & WASTE) BY ICP	9.78 mg/L	03/14/2022 09:39 AM	CREITMEYER	EPA 200.7
01055M MANGANESE, TOTAL in MG/L (WATER & WASTE) BY ICP	0.185 mg/L	03/14/2022 09:39 AM	CREITMEYER	EPA 200.7
00556H Oil & Grease in water (as Hexane Extractable Material)	<5.0 mg/L (U)	03/11/2022 02:03 PM	SAGREER	EPA 1664A
00403 pH, Lab (Electrometric)	8.1 pH units	03/09/2022 01:10 PM	JAHOUE	SM 4500-H+ B
** Comment ** Holding Time Exceeded				
00937A POTASSIUM, TOTAL (WATER & WASTE) BY ICP	1.92 mg/L	03/14/2022 09:39 AM	CREITMEYER	EPA 200.7
01147H SELENIUM, TOTAL (WATER & WASTE) BY ICPMS	6.710 ug/L	03/11/2022 01:58 PM	SCHOY	EPA 200.8
00929A SODIUM, TOTAL (WATER & WASTE) BY ICP	418.00 mg/L	03/14/2022 09:39 AM	CREITMEYER	EPA 200.7
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	2240.00 umhos/cm	03/14/2022 06:52 PM	MAMCNULTY	SM 2510B
** Comment ** SPC failed to compare with TDS after re-analysis				
01082M STRONTIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	1.090 mg/L	03/14/2022 09:39 AM	CREITMEYER	EPA 200.7
00403T Temperature at which pH is measured	17.85 C	03/09/2022 01:10 PM	JAHOUE	SM 4500-H+ B
00940 Total Chloride-Ion Chromatograph	585.31 mg/L	03/09/2022 04:56 PM	TVOROBAYCH	EPA 300.0
70300 TOTAL DISSOLVED SOLIDS @ 180C	306 mg/L	03/09/2022 12:00 AM	SCOOVER	SM 2540 C
00945 Total Sulfate-Ion Chromatograph	3.48 mg/L	03/09/2022 03:09 PM	TVOROBAYCH	EPA 300.0
00530 TOTAL SUSPENDED SOLIDS	46 mg/L	03/09/2022 02:27 PM	JRONEMUS	USGS I-3765
82079 TURBIDITY, NEPHELMETRIC	47.55 NTU	03/09/2022 11:40 AM	JAHOUE	EPA 180.1
ANSWER RECHECKED BY ANALYST				
01092A ZINC, TOTAL (WATER & WASTE) BY ICP	<30.0 ug/L (U)	03/14/2022 09:39 AM	CREITMEYER	EPA 200.7

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 3398 029

Date Collected: 03/08/2022 10:15:00 AM

Lab Sample ID: I2022003295

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: 03/22/2022 04:09:30

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: 3398 029

Date Collected: 03/08/2022 10:15:00 AM

Lab Sample ID: O2022000834

Status: Completed

Name of Sample Collector: Brady Johnson

Date Received: 03/09/2022

County: Butler

State:

Municipality: Connoquenessing Twp

██████████ ██████████
██████████
EVANS CITY PA. 16033

Sample Medium: Water

Sample Medium Type: Water

Location: NOT INDICATED

Reason: Complaint

Project: NOT INDICATED

Suite: METH

Matrix: Water

Legal Seal:	H023652	Intact:	Yes
Legal Seal:	H023653	Intact:	Yes
Legal Seal:	H023647	Intact:	Yes
Legal Seal:	H023648	Intact:	Yes
Legal Seal:	H023650	Intact:	Yes
Legal Seal:	H023651	Intact:	Yes
Legal Seal:	H023649	Intact:	Yes

Analytical Report For
Oil And Gas Mgmt

Sample ID: 3398 029

Date Collected: 03/08/2022 10:15:00 AM

Lab Sample ID: O2022000834

Status: Completed

Stream Condition:

Appearance: Water was effervescent and cloudy with sediment.

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
74840 Ethane	53.9 ug/L (Q)	03/11/2022 02:00 AM	DACLEMENS	BOL BOL6019
74828 Methane	37000 ug/L (Q)	03/11/2022 02:00 AM	DACLEMENS	BOL BOL6019
74986 Propane	14.2 ug/L (U)	03/11/2022 02:00 AM	DACLEMENS	BOL BOL6019

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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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: 05/18/2022 09:56:57

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: 9634 347

Date Collected: 04/14/2022

Lab Sample ID: O2022001427

Status: Completed

Name of Sample Collector: Christine Miner

Date Received: 04/15/2022

County: Butler

State:

Municipality: Connoquenessing Twp

██████████ ██████████
██████████
EVANS CITY PA. 16033

Sample Medium: Ground Water

Sample Medium Type: Water

Location: 165' ww, raw water from pressure tank

Reason: Complaint

Project: NOT INDICATED

Suite: METH

Matrix: Water

Stream Condition:

Sample Comment: this is the original well on the proerty that experienced low yield

Appearance: some particulate, brown tint, slight crude oil odor

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9634 347

Date Collected: 04/14/2022

Lab Sample ID: O2022001427

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
74840 Ethane	12.4 ug/L (U)	04/15/2022 02:00 AM	DACLEMENS	BOL BOL6019
74828 Methane	980 ug/L	04/15/2022 02:00 AM	DACLEMENS	BOL BOL6019
74986 Propane	14.2 ug/L (U)	04/15/2022 02:00 AM	DACLEMENS	BOL BOL6019

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: 05/18/2022 09:57:26

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: 9634 348

Date Collected: 04/14/2022

Lab Sample ID: O2022001381

Status: Completed

Name of Sample Collector: Christine Miner

Date Received: 04/15/2022

County: Butler

State:

Municipality: Connoquenessing Twp

████████████████████
████████████████████
EVANS CITY PA. 16033

Sample Medium: Ground Water

Sample Medium Type: Water

Location: 165' ww, raw water from pressure tank

Reason: Complaint

Project: NOT INDICATED

Suite: VOADW

Matrix: Water

Stream Condition:

Sample Comment: 165' ww, this is the original well on the property that experienced low yield

Sample Lab Comment: No associated field blank was submitted with this sample

Appearance: some particulate, brown tint, slight crude oil odor

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9634 348

Date Collected: 04/14/2022

Lab Sample ID: O2022001381

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
630206 1,1,1,2-Tetrachloroethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
71556 1,1,1-Trichloroethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
79345 1,1,2,2-Tetrachloroethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
79005 1,1,2-Trichloroethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75343 1,1-Dichloroethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75354 1,1-Dichloroethene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
563586 1,1-Dichloropropene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
87616 1,2,3-Trichlorobenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
96184 1,2,3-Trichloropropane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
120821 1,2,4-Trichlorobenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
95636 1,2,4-Trimethylbenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
95501 1,2-Dichlorobenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
107062 1,2-Dichloroethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
78875 1,2-Dichloropropane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
108678 1,3,5-Trimethy benzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
541731 1,3-Dichlorobenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
142289 1,3-Dichloropropane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
106467 1,4-Dichlorobenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
594207 2,2-Dichloropropane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
78933 2-Butanone	2.50 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
591786 2-Hexanone	2.50 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
99876 4-Isopropyltoluene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
108101 4-Methyl-2-pentanone	2.50 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
67641 Acetone	2.50 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
71432 Benzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
108861 Bromobenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
74975 Bromochloromethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75274 Bromodichloromethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75252 Bromoform	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
74839 Bromomethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75150 Carbon disulfide	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
56235 Carbon tetrachloride	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
108907 Chlorobenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75003 Chloroethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75014 Chloroethene (vinyl chloride)	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9634 348

Date Collected: 04/14/2022

Lab Sample ID: O2022001381

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
67663 Chloroform	1.18 ug/L	04/20/2022 02:00 AM	ALIU	EPA 524.3
74873 Chloromethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
156592 cis-1,2-Dichloroethene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
10061015 cis-1,3-Dichloropropene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
124481 Dibromochloromethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
74953 D bromomethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75718 Dichlorodifluoromethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75092 Dichloromethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
100414 Ethylbenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
87683 Hexachlorobutadiene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
98828 Isopropy benzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
108383 m/p-Xylenes	1.00 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
1634044 Methyl-tert-butyl Ether	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
91203 Naphthalene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
104518 n-Butylbenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
103651 n-Propylbenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
95498 o-Chlorotoluene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
95476 o-Xylene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
106434 p-Chlorotoluene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
98566 PCTFB	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
135988 Sec-Buty benzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
100425 Styrene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75650 t-Butyl alcohol	5.00 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
540885 tert-Butyl Acetate	2.50 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
98066 Tert-Butylbenzene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
127184 Tetrachloroethene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
109999 Tetrahydrofuran	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
108883 Toluene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
1330207 Total Xylenes	0 ug/L	04/20/2022 02:00 AM	ALIU	EPA 524.3
156605 trans-1,2-Dichloroethene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
10061026 trans-1,3-Dichloropropene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
79016 Trichloroethene	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
75694 Trichlorofluoromethane	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3
108054 Vinyl Acetate	0.500 ug/L (U)	04/20/2022 02:00 AM	ALIU	EPA 524.3

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9634 348

Date Collected: 04/14/2022

Lab Sample ID: O2022001381

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

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: 05/18/2022 09:56:32

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: 9634 346

Date Collected: 04/14/2022

Lab Sample ID: I2022005933

Status: Completed

Name of Sample Collector: Christine Miner

Date Received: 04/15/2022

County: Butler

State:

Municipality: Connoquenessing Twp

██████████ ██████████
██████████
EVANS CITY PA. 16033

Sample Medium: Ground Water

Sample Medium Type: Water

Location: 165' ww raw water at pressure tank

Reason: Complaint

Project: NOT INDICATED

Standard Anlysis: 946

Matrix: Water

Stream Condition:

Sample Comment: This water well is not the one that is affected with methane gas. This is the original well on the property that was of low yield, so the 500' well was drilled.

Appearance: some particulate, brown tint, crude oil odor slight

**Analytical Report For
Oil And Gas Mgmt**

Sample ID: 9634 346

Date Collected: 04/14/2022

Lab Sample ID: I2022005933

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY AS CaCO3 @ pH 4.5	164.8 mg/L	04/15/2022 01:35 PM	JAHOUE	SM 2320B
** Comment ** Sample bottle had headspace present before analysis				
01105H ALUMINUM, TOTAL (WATER & WASTE) ICPMS	<15.0 ug/L (U)	04/18/2022 10:16 AM	ELEEDY	EPA 200.8
01002H ARSENIC, TOTAL (WATER & WASTE) BY ICPMS	<3.00 ug/L (U)	04/18/2022 10:16 AM	ELEEDY	EPA 200.8
01007M BARIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.765 mg/L	04/20/2022 11:55 AM	CREITMEYER	EPA 200.7
71870 BROMIDE BY ION CHROMATOGRAPHY	0.256 mg/L	04/15/2022 02:27 PM	TVOROBAYCH	EPA 300.0
00916A CALCIUM, TOTAL (WATER & WASTE) BY ICP	58.500 mg/L	04/20/2022 11:55 AM	CREITMEYER	EPA 200.7
00900 HARDNESS, TOTAL (CALCULATED)	186 mg/L	04/20/2022 11:55 AM	CREITMEYER	SM 2340 B
** Comment ** Accredited by NJ only - accreditation not available from PA				
01045M IRON, TOTAL IN MG/L (WATER & WASTE) BY ICP	5.180 mg/L	04/20/2022 11:55 AM	CREITMEYER	EPA 200.7
01132A LITHIUM, TOTAL (WATER & WASTE) BY ICP	<25.0 ug/L (U)	04/20/2022 11:55 AM	CREITMEYER	EPA 200.7
00927A MAGNESIUM, TOTAL (WATER & WASTE) BY ICP	9.68 mg/L	04/20/2022 11:55 AM	CREITMEYER	EPA 200.7
01055M MANGANESE, TOTAL in MG/L (WATER & WASTE) BY ICP	0.238 mg/L	04/20/2022 11:55 AM	CREITMEYER	EPA 200.7
00403 pH, Lab (Electrometric)	7.4 pH units	04/15/2022 01:35 PM	JAHOUE	SM 4500-H+ B
** Comment ** Holding Time Exceeded				
00937A POTASSIUM, TOTAL (WATER & WASTE) BY ICP	1.40 mg/L	04/20/2022 11:55 AM	CREITMEYER	EPA 200.7
01147H SELENIUM, TOTAL (WATER & WASTE) BY ICPMS	<4.00 ug/L (U)	04/18/2022 10:16 AM	ELEEDY	EPA 200.8
00929A SODIUM, TOTAL (WATER & WASTE) BY ICP	18.20 mg/L	04/20/2022 11:55 AM	CREITMEYER	EPA 200.7
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	420.00 umhos/cm	04/20/2022 07:59 PM	MAMCNULTY	SM 2510B
01082M STRONTIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.247 mg/L	04/20/2022 11:55 AM	CREITMEYER	EPA 200.7
00403T Temperature at which pH is measured	18.63 C	04/15/2022 01:35 PM	JAHOUE	SM 4500-H+ B
00940 Total Chloride-Ion Chromatograph	33.99 mg/L	04/15/2022 02:27 PM	TVOROBAYCH	EPA 300.0
70300 TOTAL DISSOLVED SOLIDS @ 180C	234 mg/L	04/15/2022 12:00 AM	SCOOVER	SM 2540 C
00945 Total Sulfate-Ion Chromatograph	7.54 mg/L	04/15/2022 02:27 PM	TVOROBAYCH	EPA 300.0
00530 TOTAL SUSPENDED SOLIDS	<20 mg/L (U)	04/15/2022 03:45 PM	JRONEMUS	USGS I-3765
82079 TURBIDITY, NEPHELMETRIC	30.00 NTU	04/15/2022 12:00 PM	JAHOUE	EPA 180.1
01092A ZINC, TOTAL (WATER & WASTE) BY ICP	<30.0 ug/L (U)	04/20/2022 11:55 AM	CREITMEYER	EPA 200.7

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Dr. Pamela Higgins, Technical Director, Bureau of Laboratories

Analytical Report For
Oil And Gas Mgmt

Sample ID: 9634 346

Date Collected: 04/14/2022

Lab Sample ID: I2022005933

Status: Completed

How to Interpret a Water Analysis Report

This article outlines some of the major parameters you may see on the analysis and assists you in understanding the numbers on a water test report.



Whether your water causes illness, stains on plumbing, scaly deposits, or a bad taste, a water analysis identifies the problem and enables you to make knowledgeable decisions about water treatment.

Features of a Sample Report

Once the lab has completed testing your water, you will receive a report that looks similar to Figure 1. It will contain a list of contaminants tested, the concentrations, and, in some cases, highlight any problem contaminants. An important feature of the report is the units used to measure the contaminant level in your water. Milligrams per liter (mg/l) of water are used for substances like metals and nitrates. A milligram per liter is also equal to one part per million (ppm)--that is one part contaminant to one million parts water. About 0.03 of a teaspoon of sugar dissolved in a bathtub of water is an approximation of one ppm. For extremely toxic substances like pesticides, the units used are even smaller. In these cases, parts per billion (ppb) are used. Another unit found on some test reports is that used to measure radon--picocuries per liter. Some values like pH, hardness, conductance, and turbidity are reported in units specific to the test.

In addition to the test results, a lab may make notes on any contaminants that exceeded the PA DEP drinking water

standards. For example, in Figure 1 the lab noted that total coliform bacteria and iron both exceeded the standards.

Retain your copy of the report in a safe place as a record of the quality of your water supply. If polluting activities such as mining occur in your area, you may need a record of past water quality to prove that your supply has been damaged.

*** ANALYTICAL LABORATORY REPORT ***

Client: Client's name	Collected by: KM
Project: Analytical Laboratory Services	Project Number: CL000001
Date Collected: 08/28/90	Time Collected: 7:35 am
Sample Identification: Kitchen Tap	Lab Number: 01000

Analysis	Results	Units
Total Coliform Bacteria	50	# /100ml
Nitrate-Nitrogen	4.55	mg/l
pH	7.50	units
Iron	0.55	mg/l
Hardness as CaCO ₃	280	mg/l
Sulfate Sulfur	32.0	mg/l
Chloride	25.4	mg/l
Specific Conductance	344	umhos/cc

On the basis of the above test result(s), this water sample DOES NOT MEET PaDER drinking water standards

The following notes apply to this sample:

The Total Coliform Bacteria exceeded the max. lev. of 1 colony/100ml.
The Iron level exceeded the limit of 0.3 mg/l.

Submitted by: _____
Laboratory Manager

Figure 1. A sample water analysis report.

Water test parameters

The following tables provide a general guideline to common water quality parameters that may appear on your water analysis report. The parameters are divided into three categories: health risk parameters, general indicators, and nuisance parameters. These guidelines are by no means exhaustive. However, they will provide you with acceptable limits and some information about symptoms, sources of the problem and effects.

Health Risk Parameters

The parameters in Table 1 are some common ones that have known health effects. The table lists acceptable limits, potential health effects, and possible uses and sources of the contaminant.



PennState Extension

Contaminant	Acceptable Limit	Sources/Uses	Potential Health Effects at High Concentrations
* Recommended level in water at which remedial action should be taken. No mandatory standards have been set.			
Atrazine	3 ppb or 003 ppm	used as a herbicide; surface or ground water contamination from agricultural runoff or leaching	heart and liver damage
Benzene	5 ppb or 005 ppm	gasoline additive; usually from accidental oil spills, industrial uses, or landfills	blood disorders like aplastic anemia; immune system depression; acute exposure affects central nervous system causing dizziness, headaches; long term exposure increases cancer risks
Lead at tap	0.015 ppm or 15 ppb	used in batteries; lead gasolines and pipe solder; may be leached from brass faucets, lead caulking, lead pipes, and lead soldered joints	nervous disorders and mental impairment, especially in fetuses and infants; kidney damage; blood disorders and hypertension; low birth weights
Nitrates (NO ₃)	10 mg/l (nitrate-N) 45 mg/l (nitrate)	soil by-product of agricultural fertilization; human and animal waste leaching to groundwater	methemoglobinemia (blue baby disease) in infants (birth to 6 months); low health threat to children and adults
Total Coliform	<1 coliform/100 ml	possible bacterial or viral contamination from human sewage or animal manure	diarrheal diseases, constant high level exposure can lead to cholera and hepatitis
			Radon
			300 pCi/l*
			naturally occurring gas formed from uranium decay; can seep into well water from surrounding rocks and be released in the air as it leaves the faucet
			breathing gas increases chances of lung cancer; may increase risk of stomach, colon and bladder cancers

Table 1: Standards, symptoms, and potential health effects of regulated contaminants.

General Water Quality Indicators

General Water Quality Indicators are parameters used to indicate the presence of harmful contaminants. Testing for indicators can eliminate costly tests for specific contaminants. Generally, if the indicator is present, the supply may contain the contaminant as well. For example, turbidity or the lack of clarity in a water sample usually indicates that bacteria may be present. The pH value is also considered a general water quality indicator. High or low pHs can indicate how corrosive water is. Corrosive water may further indicate that metals like lead or copper are being dissolved in the water as it passes through distribution pipes. Table 2 shows some of the common general indicators.

Indicator	Acceptable Limit	Indication
pH value	6.5 to 8.5	An important overall measure of water quality, pH can alter corrosivity and solubility of contaminants. Low pH will cause pitting of pipes and fixtures or a metallic taste. This may indicate that metals are being dissolved. At high pH, the water will have a slippery feel or a soda taste.
Turbidity	<5 NTU	Clarity of sample can indicate contamination.
Total Dissolved Solids (TDS)	500 mg/l	Dissolved minerals like iron or manganese. High TDS also can indicate hardness (scaly deposits) or cause staining, or a salty, bitter taste.

Table 2. General water quality indicators.

Nuisance contaminants are a third category of contaminants. While these have no adverse health effects, they may make water unpalatable or reduce the effectiveness of soaps and detergents. Some nuisance contaminants also cause staining. Nuisance contaminants may include **iron bacteria, hydrogen sulfide, and hardness**. Table 3 shows some typical nuisance contaminants you may see on your water analysis report.

Contaminant	Acceptable Limit	Effects
Chlorides	250 mg/l	salty or brackish taste; corrosive; blackens and pits stainless steel
Copper (Cu)	1.3 mg/l	blue-green stains on plumbing fixtures; bitter metallic taste
Iron (Fe)	0.3 mg/l	metallic taste; discolored beverages; yellowish stains, stains laundry
Manganese (Mn)	0.05 mg/l or 5 ppb	black stains on fixtures and laundry; bitter taste
Sulfates (SO ₄)	250 mg/l	greasy feel, laxative effect
Iron Bacteria	present	orangeish to brownish slime in water

Table 3. Common nuisance contaminants and their effects.

Hardness is one contaminant you will also commonly see on the report. Hard water is a purely aesthetic problem that causes soap and scaly deposits in plumbing and decreased cleaning action of soaps and detergents. Hard water can also cause scale buildup in hot water heaters and reduce their effective lifetime. Table 4 will help you interpret the hardness parameters cited on your analysis. Note that the units used in this table differ from those indicated in Figure 1. Hardness can be expressed by either mg/l or a grains per gallon (gpg). A gpg is used exclusively as a hardness unit and equals approximately 17 mg/l or ppm. Most people object to water falling in the "hard" or "very hard" categories in Table 4. However, as with all water treatment, you should carefully consider the advantages and disadvantages to softening before making a purchasing a water softener.

Concentration of hardness minerals in grains per gallon (GPG)	Hardness Level
* level at which most people find hardness objectionable	
below 1.0	soft
1.0 to 3.5	slightly hard
3.5 to 7.5	moderately hard
7.5 to 10.5*	hard
10.5 and above	very hard

Table 4. Hardness classifications.

Additional Resources

For more detailed information about water testing ask for publication *Water Tests: What Do the Numbers Mean?* at your local extension office or from this website.

Prepared by Paul D. Robillard, Assistant Professor of Agricultural Engineering, William E. Sharpe, Professor of Forest Hydrology and Bryan R. Swistock, Senior Extension Associate, Department of Ecosystem Science and Management

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Code: ART-2161

Methane Gas and Water Wells

Residents of the coal and natural gas-producing regions of Pennsylvania need to be aware of the potential dangers resulting from the accumulation of microbial gas, coal bed methane or natural gas in their water wells.

High concentrations of methane in water wells, water well enclosures and other confined spaces could cause an explosion.

What is Methane?

Methane (CH₄) is a naturally occurring hydrocarbon gas found underground. It is present in shallow and deep coal beds as well as in other rock units, and it is the main hydrocarbon found in natural gas and coal beds. Methane can occur as a gas or dissolved in the groundwater, or as a gas in the soil and rock zones below the surface.

Methane migrates from areas of high pressure to areas of low pressure. Mining and well drilling operations can affect the pressure in the subsurface and cause the migration of methane to areas of lower pressure, such as shallow aquifers and water wells used as water supplies. Gas migration in the subsurface can also be influenced by an increase or decrease in the water level of an aquifer, atmospheric pressure changes and other natural processes.

Active underground mining operations can lower groundwater levels, reducing pressure in aquifers occurring above and adjacent to the area of coal extraction. This reduction in pressure can allow gases within the overlying rock layers to migrate into nearby water wells. Methane can also be released from abandoned deep mines and from active and/or abandoned gas wells that are prone to leakage. Additionally, improperly constructed operating gas wells may mobilize methane in the subsurface. Releases from these and other sources can also migrate into nearby water wells.

Methane can migrate into water wells in a gaseous phase or dissolved in the groundwater. At atmospheric pressure, methane is soluble in water between 26-35 milligrams per liter. It is sometimes recognizable as effervescent gas bubbles in water drawn from a faucet. In some cases, the release of methane in a water well may be recognized by a sound similar to that of boiling water. However, methane is a colorless and odorless gas, and it may accumulate undetected in water wellbores and water well enclosures that are not properly vented. Methane may also move into basements of homes and other structures through plumbing and piping containing electrical connections. These conditions could lead to an explosion.

What to Do?

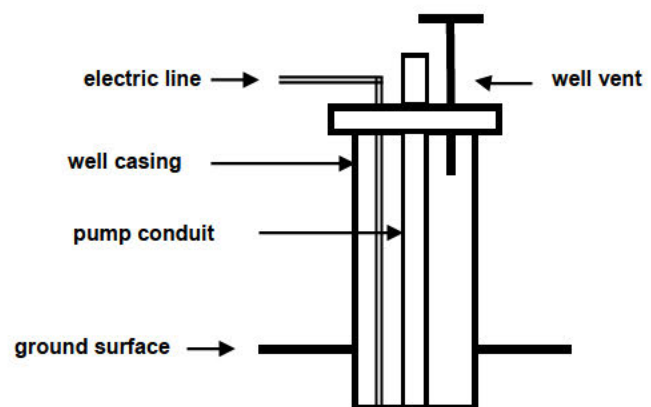
Methane gas is lighter than air with a specific gravity of 0.555, so it will not accumulate in the water wellbore if the water well is adequately vented to the atmosphere. Venting is an inexpensive and effective way to mitigate methane accumulation in water wells, water well enclosures and other confined spaces, such as basements. Proper venting reduces the potential for methane gas to seep into homes or structures from water wells.

Recommended Venting Procedures

Proper design is extremely important. Water well vents should be installed by a qualified water well driller or plumber.

The vent should extend above any possible flood level, potential ignition sources and areas of exposure (above the roof line for water wells adjacent to buildings), and it should have watertight connections to prevent surface water from entering. The well vent should be at least one (1) inch diameter or larger to facilitate gas flow. The end of the vent pipe should have a down-turned "gooseneck" or "T" and be capped with corrosion-resistant screening. If the vent is not screened, it can become a potential entry point for debris and small animals.

If concentrations in a vent pipe happen to exceed the lower explosive limit for methane (5 percent methane in air), installation of a spark-arresting cap at the end of the pipe should be considered. In addition, conduits from the water well that carry electrical lines or waterlines into the building should be sealed so that the air in the conduit



does not vent into the building. Venting of wells will not adequately remove methane dissolved in the groundwater, but properly designed water aeration systems are one effective way to lower the concentration of methane dissolved in the water.

Enclosed Wells

When the top of the water well is buried in a covered pit or enclosed in a basement, the vent pipe must vent gas to the outside air, as shown in the diagram at right.

The vent pipe should be screened and extend above any possible flood level, roof line, potential ignition sources and areas of exposure.

In cases where the water well is located in an enclosure, it should have a tight-fitting well cap, and all openings through the cap should be properly sealed to prevent methane from escaping into the water well enclosure.

Play It Safe

When a water well is no longer in service, the plumbing connections should be disconnected and sealed to prevent methane from entering the home or building.

NOTE: Water wells may differ considerably from the wells depicted in the diagrams. Also, well-venting requirements may vary from place to place because of differences in local plumbing codes. Therefore, water well owners are encouraged to contact a professional water well specialist or a local building code enforcement officer to determine the proper venting procedures required under the local plumbing code.

For more information on methane and water wells, please contact the local DEP office:

Southwest Regional Office

400 Waterfront Drive
Pittsburgh, PA 15222-4745
Telephone: 412-442-4000

Counties Served: Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland

South-central Regional Office

909 Elmerton Ave.
Harrisburg, PA 17110-8200
Telephone: 877-333-1904

Counties Served: Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York

Southeast Regional Office

2 E. Main St.
Norristown, PA 19401-4915
Telephone: 484-250-5900

Counties Served: Bucks, Chester, Delaware, Montgomery and Philadelphia

Northwest Regional Office

230 Chestnut St.
Meadville, PA 16335-3481
Telephone: 814-332-6945

Counties Served: Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango and Warren

North-central Regional Office

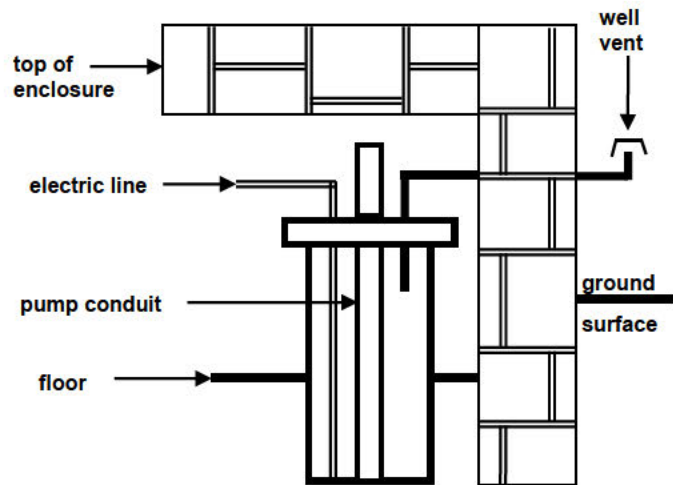
208 W. Third St., Suite 101
Williamsport, PA 17701-6448
Telephone: 570-327-3636

Counties Served: Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga and Union

Northeast Regional Office

2 Public Square
Wilkes-Barre, PA 18701-1915
Telephone: 570-826-2511

Counties Served: Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne and Wyoming



For more information, visit www.dep.state.pa.us, keyword: Wells.

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