



# EXHIBIT A



April 20, 2023

**CERTIFIED MAIL NO. 7019 1120 0000 5008 0325**  
**VIA EMAIL: [lisa@lajteam.com](mailto:lisa@lajteam.com)**

Re: Water Supply Request for Investigation 366639  
Negative Determination – 58 Pa. C.S § 3218  
Deemston Borough, Washington County

Dear Lisa Johnson:

The Department has completed its investigation of your client’s (Bryan Latkanich) water supply listed in Exhibit A (“Water Supply”). Based on the sample results and other information obtained to date, the Department cannot conclude that the Water Supply was adversely affected by 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**

<b>Date of Complaint</b>	<b>Nature of Complaint</b>	<b>Sample Results Above Statewide Standards or Recommended Levels*</b>
April 22, 2022	PFAS contamination	Hardness* – 7 mg/L Sodium* – 248.4 mg/L Total dissolved solids – 626 mg/L Total Coliform – 3.1 colonies/mL

On April 22, 2022, after being notified of your client’s concern about PFAS contamination of the Water Supply, the Department began investigating your complaint. On September 30, 2022, the Department conducted a site visit to inspect the Water Supply. On February 1, 2023, the Department collected samples from the Water Supply. The following provides some background to your complaint, and then evaluates proximate oil and gas activities and the 2023 sampling results.

The Department has previously issued two determinations regarding prior complaints concerning this Water Supply on May 5, 2019 and May 1, 2020. Those 2019 and 2020 determinations addressed levels of hardness, sodium, total dissolved solids (TDS), and bacteria (total coliform) in the Water Supply. The complaint submitted on April 22, 2022 (“2022 Complaint”) differs from prior complaints because it includes concern regarding perfluoroalkyl and polyfluoroalkyl (PFAS) substances in water from the Water Supply, and describes PFAS in detail, including some summaries of PFAS related laboratory results. The 2022 Complaint also describes dissatisfaction with the Department, the Environmental Hearing Board, a Common Pleas Judge, radioactivity regulations, and the oil and gas industry regarding several topics not specifically associated with water from your Water Supply that are not addressed in this letter, which is a water supply

complaint determination letter issued pursuant to Section 3218 of the Oil and Gas Act, 58 Pa.C.S. § 3218. PFAS chemicals are addressed in this determination letter. Because the levels of hardness, sodium, TDS, and total coliform have been addressed in prior determinations, any references in this letter are for your information only.

PFAS chemicals are not found naturally in the environment, but have been extensively produced for use in cookware, carpeting, personal care products, plastic pipes, firefighting foams, industrial processes, clothing and other fabrics, food packaging and other materials for water, grease or stain resistance. Because that widespread use has come into contact with the natural environment for decades, PFAS chemicals have been detected in groundwater and surface water in various parts of the world, including rivers in Southwest Pennsylvania and water from some Pennsylvania public water supplies.

The 2022 Complaint includes a summary of PFAS sampling results of water from the Water Supply. That sampling and analysis is associated with Engineers Without Borders and the University of Pittsburgh. However, the University of Pittsburgh determined that those results were invalid due to cross contamination by the laboratory where the samples were analyzed. The University of Pittsburgh provided updated data upon request by the Department. However, that data was also not utilized in this investigation due to a lack of quality control/quality assurance data documentation and analysis performed by a non-accredited laboratory.

The 2022 Complaint was referred to the Department of Health because it included health concerns and requests for treatment. In addition, the complaint included a request that the EPA and the United Nations investigate real property owned by Mr. Latkanich and other Pennsylvanians. The Department did contact EPA to confirm that it received the 2022 Complaint. The Department has also communicated with you, through counsel, during the investigation to arrange site visits, share information, and arrange the 2023 sampling.

The Department investigated whether oil and gas activities have occurred in the recent past that may be associated with an impact to your Water Supply. The closest oil and gas activity to your Water Supply is the Latkanich unconventional gas well pad, previously operated by Chevron, located about 500 feet northwest of your Water Supply. No recent activity appears to have occurred at this well site. After the wells on this well pad were plugged in 2020, earth was moved in large volumes and then seeded to fully restore the site. The Department reviewed historic activity at this well site to determine any evidence of the use of PFAS substances. The Department also reviewed compliance records which included violations in 2012 for releases that were addressed at the time and did not note any PFAS related chemicals.

Review of documents related to the well site did not reveal any direct evidence that PFAS chemicals were used during site construction, well drilling or completion activity, well production, well plugging, or site restoration. However, review of records did indicate that fresh water was used in the fluid mixture for stimulation activity on the Latkanich unconventional wells. This fresh water was obtained from multiple sources including municipal water authorities, which source surface water from the Monongahela River, Youghiogheny River and/or Tenmile Creek. Review of sample results from sampling conducted on surface water sources across Pennsylvania by the United States Geological Survey in summer 2019, indicated that PFAS was identified at several

locations on the Monongahela and Youghiogheny Rivers and Tenmile Creek. Based upon the widespread presence of PFAS in these freshwater sources, PFAS-containing water may have inadvertently been used on the well pad during stimulation. No indication of an incident during fracturing was identified that would cause a release to groundwater, but because the Water Supply is located downgradient of the well site, an impact from surface spills is possible.

Results of Department sampling of the Water Supply, which was conducted with the assistance of a third-party consulting firm, Mountain Research, LLC (MRI) on February 1, 2023, are summarized in the attached tables. Historic sample result data, collected by the Department during previous complaint investigations and pre-drills collected prior to drilling at the Latkanich well site, were used for comparison for this determination. The results of the 2023 sampling suggest that the water quality of the Water Supply is comparable to past sample results which did not indicate an impact by oil and gas activity.

Total coliform bacteria levels in the Water Supply were in exceedance of the primary drinking water standards, which may suggest influence by surface water allowing bacteria into the wellbore. Bacteria may have also been introduced into the Water Supply during the replacement of the well pump.

TDS in the Water Supply exceeded secondary drinking water standards, which may cause aesthetic effects but are not necessarily associated with a health concern. TDS is a measurement of all the dissolved constituents in water including natural minerals and appears to have been in exceedance of the standard in all samples collected from the Water Supply, including the pre-drill sample collected prior to any nearby oil and gas activity at the Latkanich well site. This indicates that levels of elevated TDS may be naturally occurring or due to other causes unrelated to oil and gas activities.

Hardness, pH and sodium levels were outside of recommended ranges for drinking water. Prior sample results from the Water Supply show that the hardness values have been consistently lower than the recommended range of 30-150 mg/L indicating that the water is very soft which may result in the water feeling slippery. The pH level of the Water Supply is consistently slightly over the recommended range of 6.5-8.5 which may result in poor tasting water. The sodium levels in the Water Supply have been consistently in exceedance of the recommended level of 20 mg/L which can be harmful for those on a low sodium diet. Sodium is a common naturally occurring element especially in soft water because the calcium and magnesium is typically replaced by sodium. Low hardness paired with elevated pH and sodium appears to indicate that the water from the Water Supply is being naturally softened by the limestone bedrock layers in which it is completed.

Results of glycol and VOC analyses indicate that no parameters were detected.

Three PFAS compounds were identified in the samples collected by MRI and analyzed by Pace Analytical Laboratory. The PFAS analysis indicates that perfluorohexanesulfonic acid (PFHxS) and perfluorooctanesulfonic acid (PFOS) were detected in the pre-purge sample and perfluorooctanesulfonamide (PFOSA) was detected in the post purge sample. PFHxS and PFOS were detected in the pre-purge sample, but not the post purge sample, which may indicate the source is

from some part of the plumbing components of the Water Supply, not the groundwater. The opposite is true of PFOSA, which may indicate that the source may be within well bore, pump system and/or the groundwater and not the plumbing. All of the detections are below the laboratory limit of quantification but greater than the detection limit, so the results are estimated. The level of PFOS detected in the water supply was 2.3 ppt, less than Department maximum contaminant level (MCL) for PFOS of 18 ppt. Currently, the Department has no recognized drinking water standard for PFHxS or PFOSA.

While there was no evidence of PFAS use at the Latkanich well site, as discussed above, it is possible that PFAS chemicals were present in the fresh water utilized during stimulation activity at the Latkanich well site. Given that PFAS chemicals are found in many products and materials, it is possible that the PFAS detected in your Water Supply came from a different source, such as a cleaning product, piping, parts or liquids associated with a mechanical pump, wires, or plumbing, or anything that came into contact with plastic piping or hoses or other materials manufactured or that came into contact with PFAS chemicals. With only these possibilities, the Department was unable to conclude that the presence the PFAS chemicals in the Water Supply is related to oil and gas activities or some other source.

While the Department did not determine that oil and gas activities polluted your Water Supply, please do note that your water quality does not meet (*i.e.*, is worse than) health and/or aesthetic statewide standards. You may consider exploring remedial actions regarding the levels of hardness, sodium, total dissolved solids, and total coliform as identified above. Or, alternatively, you may consider replacing your water with the public water that is plumbed to your home already and, if desired, installation of filtration or treatment for any constituents of concern in that public water.

The Department understands from ongoing discussion that concern remains regarding soil and air on your property. Summaries of soil sampling were provided to the Department during this complaint investigation, but data to support those results has not yet been received, including location data, certified results, and quality control/quality assurance data documentation. The program assigned to this complaint (Southwest District Oil and Gas District) has informed the Regional Director of the Department's Southwest Regional Office about continued concerns regarding soil and air that you have expressed during the course of this investigation.

Mr. Latkanich may contact me with any questions regarding this matter. Because you are Mr. Latkanich's legal counsel, we ask that your communications be with Department counsel assigned to this matter, Rick Watling at 412-442-4262.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board  
Rachel Carson State Office Building, Second Floor  
400 Market Street  
P.O. Box 8457

Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at <http://ehb.courtapps.com> or by contacting the Secretary to the Board at 717-787-3483. The Notice of Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

**IMPORTANT LEGAL RIGHTS ARE AT STAKE. YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD AT 717-787-3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.**

**IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.**

Sincerely,



Daniel F. Counahan  
District Oil and Gas Manager  
Southwest District Oil and Gas Operations

Enclosures:

Exhibit A  
Water Sample Results Summary Tables  
Sample Results  
Fact Sheet – Interpreting Water Supply Results

cc: James Miller – Southwest Regional Director  
Complaint File  
OCC



**CONFIDENTIAL**

**Exhibit A**

95 Hill Road  
Fredericktown, PA 15333

### Water Sample Results Summary Tables

Contaminant or Parameter	Unit	Statewide Standard or Rec. Level*	DEP/MRI Sample 02/01/2023
Alkalinity	mg/L	30-500*	477.4
Total Aluminum	mg/L	0.20	0.0159
Total Arsenic	mg/L	0.010	< 0.003 U
Total Barium	mg/L	2	0.097
Bromide	mg/L	No Standard	< 0.2 U
Total Calcium	mg/L	75*	1.425
Hardness	mg/L	30-150*	<b>6</b>
Total Iron	mg/L	0.3	< 0.100 U
Total Lithium	µg/L	No Standard	< 25 U
Total Magnesium	mg/L	No Standard	0.59
Total Manganese	mg/L	0.05	< 0.010 U
pH		6.5-8.5*	<b>8.6</b>
Total Potassium	mg/L	No Standard	< 1.00 U
Total Selenium	mg/L	0.05	< 0.004 U
Total Sodium	mg/L	20*	<b>248.4</b>
Specific Conductivity	µmhos/cm	No Standard	1008
Total Strontium	mg/L	No Standard	0.147
Total Chloride	mg/L	250	35.82
TDS	mg/L	500	<b>626</b>
Sulfate	mg/L	250	34.33
TSS	mg/L	No Standard	< 20 U
Turbidity	NTU	1 <sup>^</sup>	< 1
Total Zinc	mg/L	5	< 0.03 U
E. coli	Col/100mL	Absent	< 1
Total Coliform	Col/100mL	Absent	<b>3.1</b>
Iron Bacteria	Col/ mL	No Standard	2200
Slime Bacteria	Col/ mL	No Standard	13000
Sulfur Bacteria	Col/ mL	No Standard	325
1, 2-Propanediol	mg/L	1	0.250 U
Diethylene glycol	mg/L	No Standard	0.500 U
Ethylene glycol	mg/L	20	0.250 U

**Bold** font indicates an exceedance of standard or recommended level.

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

<sup>^</sup> The turbidity standard is applicable only to unfiltered water sources.



Parameter	Acronym	DEP MCL	LOQ	MDL	02/01/2023 Results	
					Pre-Purge	Post Purge
Perfluorobutanoic acid	PFBA		4.1	0.61	ND	ND
Perfluoropentanoic acid	PFPeA		4.1	0.55	ND	ND
Perfluorohexanoic acid	PFHxA		4.1	0.70	ND	ND
Perfluoroheptanoic acid	PFHpA		4.1	0.45	ND	ND
Perfluorooctanoic acid	PFOA	14	4.1	0.84	ND	ND
Perfluorononanoic acid	PFNA		4.1	0.47	ND	ND
Perfluorodecanoic acid	PFDA		4.1	0.53	ND	ND
Perfluoroundecanoic acid	PFUdA		4.1	0.64	ND	ND
Perfluorododecanoic acid	PFDoA		4.1	0.48	ND	ND
Perfluorotridecanoic acid	PFTTrDA		4.1	0.54	ND	ND
Perfluorotetradecanoic acid	PFTeDA		4.1	0.61	ND	ND
Perfluorohexadecanoic acid	PFHxDA		8.1	0.83	ND	ND
Perfluorooctadecanoic acid	PFODA		8.1	1.0	ND	ND
Perfluorobutanesulfonic acid	PFBS		4.1	0.42	ND	ND
Perfluoropentanesulfonic acid	PFPeS		4.1	0.60	ND	ND
Perfluorohexanesulfonic acid	PFHxS		4.1	0.56	<b>0.64 J</b>	ND
Perfluoroheptanesulfonic acid	PFHpS		4.1	0.51	ND	ND
Perfluorooctanesulfonic acid	PFOS	18	4.1	2.0	<b>2.3 J</b>	ND
Perfluorononesulfonic acid	PFNS		4.1	0.72	ND	ND
Perfluorodecanesulfonic acid	PFDS		4.1	0.79	ND	ND
Perfluorododecanesulfonic acid	PFDoS		8.1	1.1	ND	ND
Perfluorooctanesulfonamide	PFOSA		4.1	0.62	ND	<b>1.3 J</b>
N-ethyl perfluorooctane sulfonamide	NEtFOSE		8.1	0.97	ND	ND
N-methyl perfluorooctane sulfonamide	NMeFOSE		8.1	1.3	ND	ND
N-ethyl perfluorooctane sulfonamide	NEtFOSA		8.1	1.4	ND	ND
N-methyl perfluorooctane sulfonamide	NMeFOSA		16	1.3	ND	ND
N-ethyl perfluorooctanesulfonamide	NEtFOSAA		8.1	0.76	ND	ND
N-methyl perfluorooctanesulfonamide	NMeFOSAA		8.1	0.95	ND	ND
4:2 Fluorotelomer sulfonic acid	4:2 FTS		8.1	0.89	ND	ND
6:2 Fluorotelomer sulfonic acid	6:2 FTS		8.1	2.0	ND	ND
8:2 Fluorotelomer sulfonic acid	8:2 FTS		8.1	1.6	ND	ND
10:2 Fluorotelomer sulfonic acid	10:2 FTS		8.1	1.2	ND	ND
Hexafluoropropylene oxide dimer acid	GenX		8.1	2.1	ND	ND
4,8-dioxa-3H-perfluorononanoic acid	ADONA		8.1	0.49	ND	ND
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS		8.1	0.49	ND	ND
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS		8.1	0.67	ND	ND

MCL: Maximum contaminant level

LOQ: Limit of quantification

MDL: Method detection limit (The lowest level that provides 99% confidence that the analyte is detected. Any reported results values that are less than the reporting limit are considered estimated values.)

ND: Not detected at or above the MDL

J: Estimated result; Less than the LOQ and greater than or equal to the MDL.



Date of Issue: 02/17/2023 04:18:45

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

NELAP - accredited by

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

Contact Phone Number: (717) 346-7200

Analytical Report For  
Oil And Gas Mgmt

Sample ID: 9542 001

Date Collected: 02/01/2023 10:47:00 AM

Lab Sample ID: I2023001507

Status: Completed

Name of Sample Collector: Jessica M Hirsch

Date Received: 02/02/2023

County: Washington

State:

Municipality: Deemston Boro

BRYAN LATKANICH  
95 HILL RD  
FREDERICKTOWN PA. 15333

Sample Medium: Ground Water

Sample Medium Type: Water

Location: Pressure Tank

Reason: Complaint

Project: NOT INDICATED

Standard Anlysis: 946

Matrix: Water

Legal Seal:	1177312	Intact:	Yes
Legal Seal:	1177315	Intact:	Yes
Legal Seal:	1177313	Intact:	Yes

Stream Condition:

Appearance: Clear with no noticable odor

Analytical Report For  
Oil And Gas Mgmt

Sample ID: 9542 001

Date Collected: 02/01/2023 10:47:00 AM

Lab Sample ID: I2023001507

Status: Completed



Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
00410 ALKALINITY AS CaCO3 @ pH 4.5	477.4 mg/L	02/02/2023 12:46 PM	JAHOUE	SM 2320B
** Comment ** Sample bottle had headspace present before analysis				
01105H ALUMINUM, TOTAL (WATER & WASTE) ICPMS	15.900 ug/L	02/03/2023 10:11 AM	SCHOY	EPA 200.8
01002H ARSENIC, TOTAL (WATER & WASTE) BY ICPMS	<3.00 ug/L (U)	02/03/2023 10:11 AM	SCHOY	EPA 200.8
01007M BARIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.097 mg/L	02/03/2023 10:33 AM	CWINDLE	EPA 200.7
71870 BROMIDE BY ION CHROMATOGRAPHY	<0.2 mg/L (U)	02/08/2023 03:25 PM	TVOROBAYCH	EPA 300.0
00916A CALCIUM, TOTAL (WATER & WASTE) BY ICP	1.425 mg/L	02/03/2023 10:33 AM	CWINDLE	EPA 200.7
00900 HARDNESS, TOTAL (CALCULATED)	6 mg/L	02/03/2023 10:33 AM	CWINDLE	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)	02/03/2023 10:33 AM	CWINDLE	EPA 200.7
01132A LITHIUM, TOTAL (WATER & WASTE) BY ICP	<25.0 ug/L (U)	02/03/2023 10:33 AM	CWINDLE	EPA 200.7
00927A MAGNESIUM, TOTAL (WATER & WASTE) BY ICP	0.59 mg/L	02/03/2023 10:33 AM	CWINDLE	EPA 200.7
01055M MANGANESE, TOTAL in MG/L (WATER & WASTE) BY ICP	<0.010 mg/L (U)	02/03/2023 10:33 AM	CWINDLE	EPA 200.7
00403 pH, Lab (Electrometric)	8.6 pH units	02/02/2023 12:46 PM	JAHOUE	SM 4500-H+ B
** Comment ** Holding Time Exceeded				
00937A POTASSIUM, TOTAL (WATER & WASTE) BY ICP	<1.00 mg/L (U)	02/03/2023 10:33 AM	CWINDLE	EPA 200.7
01147H SELENIUM, TOTAL (WATER & WASTE) BY ICPMS	<4.00 ug/L (U)	02/03/2023 10:11 AM	SCHOY	EPA 200.8
00929A SODIUM, TOTAL (WATER & WASTE) BY ICP	248.40 mg/L	02/03/2023 11:24 AM	CWINDLE	EPA 200.7
00095 SPECIFIC CONDUCTIVITY @ 25.0 C	1008.00 umhos/cm	02/08/2023 02:27 PM	MTUZINSKI	SM 2510B
01082M STRONTIUM, TOTAL in MG/L (WATER & WASTE) BY ICP	0.147 mg/L	02/03/2023 10:33 AM	CWINDLE	EPA 200.7
00403T Temperature at which pH is measured	19.06 C	02/02/2023 12:46 PM	JAHOUE	SM 4500-H+ B
00940 Total Chloride-Ion Chromatograph	35.82 mg/L	02/03/2023 06:08 PM	TVOROBAYCH	EPA 300.0
70300 TOTAL DISSOLVED SOLIDS @ 180C	626 mg/L	02/07/2023 11:20 AM	JMULHOLLEM	SM 2540C-15
00945 Total Sulfate-Ion Chromatograph	34.33 mg/L	02/02/2023 05:00 PM	TVOROBAYCH	EPA 300.0
00530 TOTAL SUSPENDED SOLIDS	<20 mg/L (U)	02/02/2023 02:53 PM	CLONTZ	USGS I-3765-85
82079 TURBIDITY, NEPHELMETRIC	<1 NTU	02/02/2023 11:59 AM	JAHOUE	EPA 180.1
01092A ZINC, TOTAL (WATER & WASTE) BY ICP	<30.0 ug/L (U)	02/03/2023 10:33 AM	CWINDLE	EPA 200.7

**Analytical Report For  
Oil And Gas Mgmt**

**Sample ID:** 9542 001

**Date Collected:** 02/01/2023 10:47:00 AM

**Lab Sample ID:** I2023001507

**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: 02/10/2023 04:15:33

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: 9542 002

Date Collected: 02/01/2023 10:48:00 AM

Lab Sample ID: B2023000358

Status: Completed

Name of Sample Collector: Jessica M Hirsch

Date Received: 02/02/2023

County: Washington

State:

Municipality: Deemston Boro

BRYAN LATKANICH  
95 HILL RD  
FREDERICKTOWN PA. 15333

Sample Medium: Ground Water

Sample Medium Type: Water

Location: Pressure Tank

Reason: Complaint

Project: NOT INDICATED

Standard Anlysis: B016

Matrix: Water

Legal Seal: 1177317	Intact: Yes
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Stream Condition:

Appearance: Clear with no noticable odor

Analytical Report For  
Oil And Gas Mgmt

Sample ID: 9542 002

Date Collected: 02/01/2023 10:48:00 AM

Lab Sample ID: B2023000358

Status: Completed



Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
99031 Iron Bacteria* Analysis using HACH-BART methodology, results are estimated.	2200 cfu/mL	02/02/2023 08:51 AM	ABMICKEY	BOL 7025
99033 Slime Bacteria* Analysis using HACH-BART methodology, results are estimated.	13000 cfu/mL	02/02/2023 08:51 AM	ABMICKEY	BOL 7025
99032 Sulfur Bacteria* Analysis using HACH-BART methodology, results are estimated.	325 cfu/mL	02/02/2023 08:51 AM	ABMICKEY	BOL 7025

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: 02/05/2023 04:07:31

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: 9542 003

Date Collected: 02/01/2023 10:49:00 AM

Lab Sample ID: B2023000357

Status: Completed

Name of Sample Collector: Jessica M Hirsch

Date Received: 02/02/2023

County: Washington

State:

Municipality: Deemston Boro

BRYAN LATKANICH  
95 HILL RD  
FREDERICKTOWN PA. 15333

Sample Medium: Ground Water

Sample Medium Type: Water

Location: Pressure Tank

Reason: Complaint

Project: NOT INDICATED

Standard Anlysis: B017

Matrix: Water

Legal Seal: 1177316	Intact: Yes
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Stream Condition:

Appearance: Clear with no noticable odor

Analytical Report For  
Oil And Gas Mgmt

Sample ID: 9542 003

Date Collected: 02/01/2023 10:49:00 AM

Lab Sample ID: B2023000357

Status: Completed



Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
MMOECT E. coli MPN	<1.0 cf/100mL	02/02/2023 08:44 AM	ABMICKEY	SM 9223B
MMO-T Total Coliform MPN	3.1 cf/100mL	02/02/2023 08:44 AM	ABMICKEY	SM 9223B

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

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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: 02/05/2023 04:09:23

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

NELAP - accredited by

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

Contact Phone Number: (717) 346-7200

Analytical Report For  
Oil And Gas Mgmt

Sample ID: 9542 004

Date Collected: 02/01/2023 10:50:00 AM

Lab Sample ID: O2023000118

Status: Completed

Name of Sample Collector: Jessica M Hirsch

Date Received: 02/02/2023

County: Washington

State:

Municipality: Deemston Boro

BRYAN LATKANICH  
95 HILL RD  
FREDERICKTOWN PA. 15333

Sample Medium: Ground Water

Sample Medium Type: Water

Location: Pressure Tank

Reason: Complaint

Project: NOT INDICATED

Suite: WSOLX

Matrix: Water

Legal Seal:	1177321	Intact:	Yes
Legal Seal:	1177320	Intact:	Yes

Stream Condition:

Appearance: Clear with no noticable odor

**Analytical Report For  
Oil And Gas Mgmt**

Sample ID: 9542 004

Date Collected: 02/01/2023 10:50:00 AM

Lab Sample ID: O2023000118

Status: Completed



Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
57556 1,2-Propanediol	0.250 mg/L (U)	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D
111762 2-Butoxyethanol	Cancelled	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D
111466 Diethylene glycol	0.500 mg/L (U)	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D
107211 Ethylene Glycol	0.250 mg/L (U)	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D
EXTRACTED DATE	02022023 Day	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D
112276 Triethylene glycol	Cancelled	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D

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

**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: 02/05/2023 04:13:36

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

NELAP - accredited by

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

Contact Phone Number: (717) 346-7200

Analytical Report For  
Oil And Gas Mgmt

Sample ID: 9542 005

Date Collected: 02/01/2023 10:51:00 AM

Lab Sample ID: O2023000119

Status: Completed

Name of Sample Collector: Jessica M Hirsch

Date Received: 02/02/2023

County: Washington

State:

Municipality: Deemston Boro

BRYAN LATKANICH  
95 HILL RD  
FREDERICKTOWN PA. 15333

Sample Medium: Ground Water

Sample Medium Type: Water

Location: Field blank filled in basement

Reason: Complaint

Project: NOT INDICATED

Suite: WSOLX

Matrix: Water

Legal Seal:	1177318	Intact:	Yes
Legal Seal:	1177319	Intact:	Yes

Stream Condition:

Appearance: Clear, no odor

**Analytical Report For  
Oil And Gas Mgmt**

Sample ID: 9542 005

Date Collected: 02/01/2023 10:51:00 AM

Lab Sample ID: O2023000119

Status: Completed



Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Approved by	Test Method
57556 1,2-Propanediol	0.250 mg/L (U)	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D
111762 2-Butoxyethanol	Cancelled	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D
111466 Diethylene glycol	0.500 mg/L (U)	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D
107211 Ethylene Glycol	0.250 mg/L (U)	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D
EXTRACTED DATE	02022023 Day	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D
112276 Triethylene glycol	Cancelled	02/03/2023 02:00 AM	DACLEMENS	EPA 8015D

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

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Jennifer Fesler, 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.



2019 Ninth Avenue  
 PO Box 1925  
 Altoona, PA 16603  
 (814) 946-4306

NELAP: PA 07-062, VA 460212  
 State Certifications: MD 275, WV 364



www.fairwaylaboratories.com

Mountain Research LLC  
 825 25th Street  
 Altoona, PA 16601

Project: PA DEP PFAS SAMPLING

Project Number: [none]

Collector: CLIENT

**Reported:**

Project Manager: Jason Floyd

Number of Containers: 17

03/09/23 13:00

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
PRE-PURGE	AXB0149-01	Water	Grab	02/01/23 10:30	02/01/23 13:51
POST-PURGE	AXB0149-02	Water	Grab	02/01/23 10:40	02/01/23 13:51
BLANK	AXB0149-03	Water	Grab	02/01/23 10:45	02/01/23 13:51
TRIP BLANK	AXB0149-04	Water	Grab	02/01/23 10:45	02/01/23 13:51

AXB0149 Reported down to MDLs. This report replaces the report issued on 03/02/23 at 1118. 03/09/23 RB

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Ron Bollman

Project Manager

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NELAP: PA 07-062, VA 460212  
 State Certifications: MD 275, WV 364



Mountain Research LLC  
 825 25th Street  
 Altoona, PA 16601

Project: PA DEP PFAS SAMPLING

Project Number: [none]

Collector: CLIENT

Reported:

Project Manager: Jason Floyd

Number of Containers: 17

03/09/23 13:00

**Client Sample ID: POST-PURGE**

**Date/Time Sampled: 02/01/23 10:40**

**Laboratory Sample ID: AXB0149-02 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
<b>Purgeable Organic Compounds by EPA Method 524.2</b>								
Benzene	<0.160	0.160	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Carbon tetrachloride	<0.250	0.250	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Chlorobenzene	<0.360	0.360	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Naphthalene	<0.400	0.400	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
1,2-Dichlorobenzene	<0.400	0.400	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
1,3-Dichlorobenzene	<0.390	0.390	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
1,2-Dichloroethane	<0.210	0.210	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
1,1-Dichloroethene	<0.270	0.270	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
cis-1,2-Dichloroethene	<0.330	0.330	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
trans-1,2-Dichloroethene	<0.240	0.240	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
1,2-Dichloropropane	<0.300	0.300	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Ethylbenzene	<0.410	0.410	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Methylene chloride	<0.440	0.440	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Methyl tert-butyl ether	<0.210	0.210	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Styrene	<0.400	0.400	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Tetrachloroethene	<0.400	0.400	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Toluene	<0.250	0.250	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
1,2,4-Trichlorobenzene	<0.390	0.390	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
1,1,2-Trichloroethane	<0.290	0.290	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
1,1,1-Trichloroethane	<0.310	0.310	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U

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NELAP: PA 07-062, VA 460212  
 State Certifications: MD 275, WV 364



Mountain Research LLC  
 825 25th Street  
 Altoona, PA 16601

Project: PA DEP PFAS SAMPLING

Project Number: [none]

Collector: CLIENT

Reported:

Project Manager: Jason Floyd

Number of Containers: 17

03/09/23 13:00

**Client Sample ID: POST-PURGE**

**Date/Time Sampled: 02/01/23 10:40**

**Laboratory Sample ID: AXB0149-02 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
<b>Purgeable Organic Compounds by EPA Method 524.2</b>								
Trichloroethene	<0.190	0.190	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Vinyl chloride	<0.310	0.310	0.500	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Xylenes (total)	<0.950	0.950	1.00	ug/l	02/01/23 17:34	EPA 524.2/4.1	JML	U
Surrogate: 4-Bromofluorobenzene		89.4 %	70-130		02/01/23 17:34	EPA 524.2/4.1	JML	
Surrogate: 1,2-Dichlorobenzene-d4		95.0 %	70-130		02/01/23 17:34	EPA 524.2/4.1	JML	

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Mountain Research LLC  
 825 25th Street  
 Altoona, PA 16601

Project: PA DEP PFAS SAMPLING

Project Number: [none]

Collector: CLIENT

Reported:

Project Manager: Jason Floyd

Number of Containers: 17

03/09/23 13:00

**Client Sample ID: BLANK**

**Date/Time Sampled: 02/01/23 10:45**

**Laboratory Sample ID: AXB0149-03 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
<b>Purgeable Organic Compounds by EPA Method 524.2</b>								
Benzene	<0.160	0.160	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Carbon tetrachloride	<0.250	0.250	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Chlorobenzene	<0.360	0.360	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Naphthalene	<0.400	0.400	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
1,2-Dichlorobenzene	<0.400	0.400	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
1,3-Dichlorobenzene	<0.390	0.390	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
1,2-Dichloroethane	<0.210	0.210	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
1,1-Dichloroethene	<0.270	0.270	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
cis-1,2-Dichloroethene	<0.330	0.330	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
trans-1,2-Dichloroethene	<0.240	0.240	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
1,2-Dichloropropane	<0.300	0.300	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Ethylbenzene	<0.410	0.410	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Methylene chloride	<0.440	0.440	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Methyl tert-butyl ether	<0.210	0.210	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Styrene	<0.400	0.400	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Tetrachloroethene	<0.400	0.400	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Toluene	<0.250	0.250	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
1,2,4-Trichlorobenzene	<0.390	0.390	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
1,1,2-Trichloroethane	<0.290	0.290	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
1,1,1-Trichloroethane	<0.310	0.310	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U

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NELAP: PA 07-062, VA 460212  
 State Certifications: MD 275, WV 364



Mountain Research LLC  
 825 25th Street  
 Altoona, PA 16601

Project: PA DEP PFAS SAMPLING

Project Number: [none]

Collector: CLIENT

Reported:

Project Manager: Jason Floyd

Number of Containers: 17

03/09/23 13:00

Client Sample ID: BLANK

Date/Time Sampled: 02/01/23 10:45

Laboratory Sample ID: AXB0149-03 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
<b>Purgeable Organic Compounds by EPA Method 524.2</b>								
Trichloroethene	<0.190	0.190	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Vinyl chloride	<0.310	0.310	0.500	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Xylenes (total)	<0.950	0.950	1.00	ug/l	02/01/23 18:03	EPA 524.2/4.1	JML	U
Surrogate: 4-Bromofluorobenzene		86.6 %	70-130		02/01/23 18:03	EPA 524.2/4.1	JML	
Surrogate: 1,2-Dichlorobenzene-d4		90.8 %	70-130		02/01/23 18:03	EPA 524.2/4.1	JML	

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NELAP: PA 07-062, VA 460212  
 State Certifications: MD 275, WV 364

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Mountain Research LLC  
 825 25th Street  
 Altoona, PA 16601  
 Project Manager: Jason Floyd

Project: PA DEP PFAS SAMPLING  
 Project Number: [none]  
 Collector: CLIENT  
 Number of Containers: 17

Reported: 03/09/23 13:00

**Client Sample ID: TRIP BLANK** **Date/Time Sampled: 02/01/23 10:45**

**Laboratory Sample ID: AXB0149-04 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
<b>Purgeable Organic Compounds by EPA Method 524.2</b>								
Benzene	<0.160	0.160	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Carbon tetrachloride	<0.250	0.250	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Chlorobenzene	<0.360	0.360	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Naphthalene	<0.400	0.400	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
1,2-Dichlorobenzene	<0.400	0.400	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
1,3-Dichlorobenzene	<0.390	0.390	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
1,2-Dichloroethane	<0.210	0.210	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
1,1-Dichloroethene	<0.270	0.270	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
cis-1,2-Dichloroethene	<0.330	0.330	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
trans-1,2-Dichloroethene	<0.240	0.240	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
1,2-Dichloropropane	<0.300	0.300	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Ethylbenzene	<0.410	0.410	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Methylene chloride	<0.440	0.440	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Methyl tert-butyl ether	<0.210	0.210	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Styrene	<0.400	0.400	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Tetrachloroethene	<0.400	0.400	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Toluene	<0.250	0.250	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
1,2,4-Trichlorobenzene	<0.390	0.390	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
1,1,2-Trichloroethane	<0.290	0.290	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
1,1,1-Trichloroethane	<0.310	0.310	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U

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NELAP: PA 07-062, VA 460212  
 State Certifications: MD 275, WV 364



Mountain Research LLC  
 825 25th Street  
 Altoona, PA 16601

Project: PA DEP PFAS SAMPLING

Project Number: [none]

Collector: CLIENT

Reported:

Project Manager: Jason Floyd

Number of Containers: 17

03/09/23 13:00

Client Sample ID: TRIP BLANK

Date/Time Sampled: 02/01/23 10:45

Laboratory Sample ID: AXB0149-04 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
<b>Purgeable Organic Compounds by EPA Method 524.2</b>								
Trichloroethene	<0.190	0.190	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Vinyl chloride	<0.310	0.310	0.500	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Xylenes (total)	<0.950	0.950	1.00	ug/l	02/01/23 18:32	EPA 524.2/4.1	JML	U
Surrogate: 4-Bromofluorobenzene		89.0 %	70-130		02/01/23 18:32	EPA 524.2/4.1	JML	
Surrogate: 1,2-Dichlorobenzene-d4		90.6 %	70-130		02/01/23 18:32	EPA 524.2/4.1	JML	

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Altoona, PA 16603  
(814) 946-4306

NELAP: PA 07-062, VA 460212  
State Certifications: MD 275, WV 364



www.fairwaylaboratories.com

Mountain Research LLC  
825 25th Street  
Altoona, PA 16601

Project: PA DEP PFAS SAMPLING

Project Number: [none]

Collector: CLIENT

Reported:

Project Manager: Jason Floyd

Number of Containers: 17

03/09/23 13:00

**Notes**

U Analysis has been reported to the Method Detection Limit (MDL). All reported result values that are less than the Reporting Limit (RL) are considered estimated values.



2019 Ninth Avenue  
 PO Box 1925  
 Altoona, PA 16603  
 (814) 946-4306

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Mountain Research LLC  
 825 25th Street  
 Altoona, PA 16601

Project: PA DEP PFAS SAMPLING

Project Number: [none]

Collector: CLIENT

Reported:

Project Manager: Jason Floyd

Number of Containers: 17

03/09/23 13:00

**Definitions:**

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

+ MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Unless otherwise noted, all results for solids are reported on a dry weight basis.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

# The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory; and should be considered as analyzed outside the EPA holding time.

^ The following analytes are to be filtered immediately upon sampling: Hexavalent Chromium. Filtration through a 0.45 micron filter within 15 minutes of sampling is required for compliance with the Clean Water Act (CWA) for reporting of hexavalent chromium to prevent interconversion of chromium species.

\* **Analysis location indicator:**

**D:** Indicates analysis performed by Fairway Laboratories, Inc., 40 Hoover Ave., DuBois, PA 15801. PA DEP Chapter 252 certification: PA 33-00258.

**E:** Indicates analysis performed by Fairway Laboratories, Inc., 1920 East 38th Street, Erie, PA 16510. NELAP certification: PA 25-05907.

**P:** Indicates analysis performed by Fairway Laboratories, Inc., 89 Kristi Rd., Pennsdale, PA 17756. PA DEP Chapter 252 certification: PA 41-04684.

**W:** Indicates analysis performed by Fairway Laboratories, Inc., 1851 Golden Mile Rd., Wysox, PA 18854. NELAP certification: PA 08-05622 and NY 12127.

< Represents "less than" - indicates that the result was less than the RL, or the MDL if indicated for the parameter.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values. If Radiological results are reported, the MDC - Minimum Detectable Concentration is shown in the MDL column.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

Fairway Laboratories, Inc.

*Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.*

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



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Mountain Research LLC	Project: PA DEP PFAS SAMPLING
825 25th Street	Project Number: [none]
Altoona, PA 16601	Collector: CLIENT
Project Manager: Jason Floyd	Number of Containers: 17
	Reported: 03/09/23 13:00

**Definitions Continued:**

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

ND Non Detect. The noted analyte was not detected in the sample.

**(-) Method Revision Indicator - West Virginia Samples**

- EPA 8270D - : Indicates that samples collected in West Virginia are analyzed by Method SW 8270E.
- EPA 8260B - : Indicates that samples collected in West Virginia are analyzed by Method SW 8260D.
- EPA 8015D - : Indicates that samples collected in West Virginia are analyzed by Method SW 8015C.
- EPA 1010 - : Indicates that samples collected in West Virginia are analyzed by Method SW 1010B.
- EPA 6010B - : Indicates that samples collected in West Virginia are analyzed by Method SW 6010D.



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Mountain Research LLC  
 825 25th Street  
 Altoona, PA 16601

Project: PA DEP PFAS SAMPLING

Project Number: [none]

Collector: CLIENT

Reported:

Project Manager: Jason Floyd

Number of Containers: 17

03/09/23 13:00

**Terms & Conditions**

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

**CHAIN OF CUSTODY** Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

**CONFIDENTIALITY** Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

**CONTRACTS** All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

**PAYMENT/BILLING** Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

**SAMPLE COLLECTION AND SUBMISSION** Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody. Samples received at the laboratory after business hours are verified on the next business day. Discrepancies are documented on the Receiving Document.

**SUBCONTRACTING** Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

**RETURN OF RESULTS** Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

**SAMPLE DISPOSAL** Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

**HAZARD COMMUNICATION** The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

**WARRANTY AND LIMITATION OF LIABILITY** For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

**LITIGATION** All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

Fairway Laboratories, Inc.

*Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.*

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## Report of Analysis

**Pace Analytical**  
2019 Ninth Ave  
Altoona, PA 16602  
Attention: Michelle Fye

Project Name: AXB0149

Lot Number: **YB10024**

Date Completed: 03/08/2023

Revision Date: 03/08/2023

03/08/2023 5:14 PM

Approved and released by:

Project Coordinator 1: **Jenna S. Holliday**



The electronic signature above is the equivalent of a handwritten signature.

This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.



# PACE ANALYTICAL SERVICES, LLC

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639



## Case Narrative Pace Analytical Lot Number: YB10024

**Report revision 03/08/2023: This PDF report has been revised to include an updated reporting format. This report supersedes and replaces any prior reports issued under this lot number.**

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.



Sample Summary  
Pace Analytical  
Lot Number: YB10024

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	AXB0149-01	Aqueous	02/01/2023 1030	02/10/2023
002	AXB0149-02	Aqueous	02/01/2023 1040	02/10/2023
003	AXB0149-03	Aqueous	02/01/2023 1045	02/10/2023

(3 samples)



**Detection Summary**  
**Pace Analytical**  
**Lot Number: YB10024**

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	AXB0149-01	Aqueous	PFHxS	PFAS by ID	0.64	J	ng/L	5
001	AXB0149-01	Aqueous	PFOS	PFAS by ID	2.3	J	ng/L	5
002	AXB0149-02	Aqueous	PFOSA	PFAS by ID	1.3	J	ng/L	7

(3 detections)

# PFAS by LC/MS/MS



Client: **Pace Analytical**

Laboratory ID: **YB10024-001**

Description: **AXB0149-01**

Matrix: **Aqueous**

Date Sampled: **02/01/2023 1030**

Date Received: **02/10/2023**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	02/17/2023 1956	MMM	02/13/2023 1102	67392

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		8.1	0.49	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		8.1	0.67	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		8.1	1.6	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		8.1	2.0	ng/L	1
1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0	PFAS by ID SOP	ND		8.1	1.2	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		8.1	0.89	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		8.1	2.1	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		8.1	0.49	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		8.1	1.4	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		8.1	0.76	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		8.1	0.97	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		16	1.3	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		8.1	0.95	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		8.1	1.3	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		4.1	0.42	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		4.1	0.79	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		4.1	0.51	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		4.1	0.72	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		4.1	0.62	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		4.1	0.60	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		8.1	1.1	ng/L	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>355-46-4</b>	<b>PFAS by ID SOP</b>	<b>0.64</b>	<b>J</b>	<b>4.1</b>	<b>0.56</b>	<b>ng/L</b>	<b>1</b>
Perfluoro-n-butanefluoronic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		4.1	0.61	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		4.1	0.53	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		4.1	0.48	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		4.1	0.45	ng/L	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	67905-19-5	PFAS by ID SOP	ND		8.1	0.83	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		4.1	0.70	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		4.1	0.47	ng/L	1
Perfluoro-n-octadecanoic acid (PFODA)	16517-11-6	PFAS by ID SOP	ND		8.1	1.0	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		4.1	0.84	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		4.1	0.55	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		4.1	0.61	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		4.1	0.54	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		4.1	0.64	ng/L	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>1763-23-1</b>	<b>PFAS by ID SOP</b>	<b>2.3</b>	<b>J</b>	<b>4.1</b>	<b>2.0</b>	<b>ng/L</b>	<b>1</b>

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		103	25-150
13C2_6:2FTS		110	25-150
13C2_8:2FTS		93	25-150
13C2_PFDaA		78	25-150
13C2_PFHxDA		78	25-150
13C2_PFTeDA		78	25-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit      Q = Surrogate failure  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)  
 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

# PFAS by LC/MS/MS



Client: **Pace Analytical**

Laboratory ID: **YB10024-001**

Description: **AXB0149-01**

Matrix: **Aqueous**

Date Sampled: **02/01/2023 1030**

Date Received: **02/10/2023**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C3_PFBs		106	25-150
13C3_PFHxS		108	25-150
13C3-HFPO-DA		94	25-150
13C4_PFBa		103	25-150
13C4_PFHpA		106	25-150
13C5_PFHxA		104	25-150
13C5_PFPeA		99	25-150
13C6_PFDA		104	25-150
13C7_PFUdA		88	25-150
13C8_PFOA		104	25-150
13C8_PFOS		105	25-150
13C8_PFOsA		105	10-150
13C9_PFNA		101	25-150
d-EtFOSA		63	10-150
d5-EtFOSAA		83	25-150
d9-EtFOSE		63	10-150
d-MeFOSA		69	10-150
d3-MeFOSAA		92	25-150
d7-MeFOSE		71	10-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit      Q = Surrogate failure  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS



Client: **Pace Analytical**

Laboratory ID: **YB10024-002**

Description: **AXB0149-02**

Matrix: **Aqueous**

Date Sampled: **02/01/2023 1040**

Date Received: **02/10/2023**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	02/17/2023 2018	MMM	02/13/2023 1102	67392

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		8.0	0.48	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		8.0	0.66	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		8.0	1.6	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		8.0	2.0	ng/L	1
1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0	PFAS by ID SOP	ND		8.0	1.2	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		8.0	0.87	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		8.0	2.1	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		8.0	0.48	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		8.0	1.4	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		8.0	0.75	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		8.0	0.95	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		16	1.3	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		8.0	0.93	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		8.0	1.3	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		4.0	0.41	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		4.0	0.78	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		4.0	0.50	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		4.0	0.71	ng/L	1
<b>Perfluoro-1-octanesulfonamide (PFOSA)</b>	<b>754-91-6</b>	<b>PFAS by ID SOP</b>	<b>1.3</b>	<b>J</b>	<b>4.0</b>	<b>0.61</b>	<b>ng/L</b>	<b>1</b>
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		4.0	0.59	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		8.0	1.0	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		4.0	0.55	ng/L	1
Perfluoro-n-butanefluoronic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		4.0	0.60	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		4.0	0.52	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		4.0	0.47	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		4.0	0.45	ng/L	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	67905-19-5	PFAS by ID SOP	ND		8.0	0.81	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		4.0	0.69	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		4.0	0.46	ng/L	1
Perfluoro-n-octadecanoic acid (PFODA)	16517-11-6	PFAS by ID SOP	ND		8.0	1.0	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		4.0	0.83	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		4.0	0.54	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		4.0	0.60	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		4.0	0.53	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		4.0	0.63	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		4.0	2.0	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		93	25-150
13C2_6:2FTS		103	25-150
13C2_8:2FTS		86	25-150
13C2_PFDa		79	25-150
13C2_PFHxDA		84	25-150
13C2_PFTeDA		81	25-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit      Q = Surrogate failure  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS



Client: **Pace Analytical**

Laboratory ID: **YB10024-002**

Description: **AXB0149-02**

Matrix: **Aqueous**

Date Sampled: **02/01/2023 1040**

Date Received: **02/10/2023**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C3_PFBs		111	25-150
13C3_PFHxS		106	25-150
13C3-HFPO-DA		92	25-150
13C4_PFBa		99	25-150
13C4_PFHpA		99	25-150
13C5_PFHxA		105	25-150
13C5_PFPeA		104	25-150
13C6_PFDA		96	25-150
13C7_PFUdA		86	25-150
13C8_PFOA		111	25-150
13C8_PFOS		101	25-150
13C8_PFOSA		98	10-150
13C9_PFNA		104	25-150
d-EtFOSA		63	10-150
d5-EtFOSAA		79	25-150
d9-EtFOSE		66	10-150
d-MeFOSA		73	10-150
d3-MeFOSAA		90	25-150
d7-MeFOSE		70	10-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit      Q = Surrogate failure  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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PFAS by LC/MS/MS



Client: **Pace Analytical**

Laboratory ID: **YB10024-003**

Description: **AXB0149-03**

Matrix: **Aqueous**

Date Sampled: **02/01/2023 1045**

Date Received: **02/10/2023**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	02/17/2023 2040	MMM	02/13/2023 1102	67392

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		8.2	0.50	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		8.2	0.68	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		8.2	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		8.2	2.1	ng/L	1
1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0	PFAS by ID SOP	ND		8.2	1.2	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		8.2	0.90	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		8.2	2.1	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		8.2	0.50	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		8.2	1.4	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		8.2	0.77	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		8.2	0.98	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		16	1.3	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		8.2	0.96	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		8.2	1.3	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		4.1	0.43	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		4.1	0.80	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		4.1	0.51	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		4.1	0.73	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		4.1	0.63	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		4.1	0.61	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		8.2	1.1	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		4.1	0.57	ng/L	1
Perfluoro-n-butanefluoronic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		4.1	0.62	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		4.1	0.54	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		4.1	0.49	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		4.1	0.46	ng/L	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	67905-19-5	PFAS by ID SOP	ND		8.2	0.84	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		4.1	0.71	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		4.1	0.48	ng/L	1
Perfluoro-n-octadecanoic acid (PFODA)	16517-11-6	PFAS by ID SOP	ND		8.2	1.0	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		4.1	0.85	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		4.1	0.56	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		4.1	0.62	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		4.1	0.55	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		4.1	0.65	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		4.1	2.1	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		90	25-150
13C2_6:2FTS		105	25-150
13C2_8:2FTS		99	25-150
13C2_PFDaA		94	25-150
13C2_PFHxDA		91	25-150
13C2_PFTeDA		94	25-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit      Q = Surrogate failure  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS



Client: **Pace Analytical**

Laboratory ID: **YB10024-003**

Description: **AXB0149-03**

Matrix: **Aqueous**

Date Sampled: **02/01/2023 1045**

Date Received: **02/10/2023**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C3_PFBs		106	25-150
13C3_PFHxS		110	25-150
13C3-HFPO-DA		95	25-150
13C4_PFBA		100	25-150
13C4_PFHpA		95	25-150
13C5_PFHxA		103	25-150
13C5_PFPeA		99	25-150
13C6_PFDA		108	25-150
13C7_PFUdA		101	25-150
13C8_PFOA		104	25-150
13C8_PFOS		109	25-150
13C8_PFOSA		98	10-150
13C9_PFNA		105	25-150
d-EtFOSA		61	10-150
d5-EtFOSAA		88	25-150
d9-EtFOSE		91	10-150
d-MeFOSA		58	10-150
d3-MeFOSAA		97	25-150
d7-MeFOSE		95	10-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit      Q = Surrogate failure  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# Chain of Custody and Miscellaneous Documents

# PACE ANALYTICAL SERVICES, LLC



**SUBCONTRACT ORDER**  
**Fairway Laboratories, Inc.**  
**AXB0149**

**SENDING LABORATORY:**

Fairway Laboratories, Inc.  
 2019 Ninth Avenue  
 Altoona, PA 16602  
 Phone: 814.946.4306  
 Fax: 814.946.8791  
 Project Manager: Ron Boilman

**RECEIVING LABORATORY:**

Pace Analytical Services, Inc. - South Carolina  
 106 Vantage Point Drive  
 West Columbia, SC 29172  
 Phone :1(803) 376-9625  
 Fax:

  
**YB10024**  
 JSH

**Rush**  **Due 2/14/2023**

Water Type:  Drinking Water    State: **PA** WV VA OH MD  
 Non Potable Water     RADS only - Non potable Water - Gamma

**PWS ID Number:**  
**Contact Name:**

**Name of System:**  
**Contact Number:**

Sample ID: AXB0149-01	Water	Grab	Location ID	Comments:
<b>Analysis</b>	<b>Sample Begin</b>		<b>Sample End</b>	Due 2/14/2023
SUB-PFAS	2/1/2023 10:30		02/01/23 10:30	
<i>Containers Supplied:</i>				
250 mL Poly Unpres (A) 250 mL Poly Unpres (B) 250 mL Poly Unpres (C) 250 mL Poly Unpres (D)				

Sample ID: AXB0149-02	Water	Grab	Location ID	Comments:
<b>Analysis</b>	<b>Sample Begin</b>		<b>Sample End</b>	Due 2/14/2023
SUB-PFAS	2/1/2023 10:40		02/01/23 10:40	
<i>Containers Supplied:</i>				
250 mL Poly Unpres (A) 250 mL Poly Unpres (B) 250 mL Poly Unpres (C) 250 mL Poly Unpres (D)				

Sample ID: AXB0149-03	Water	Grab	Location ID	Comments:
<b>Analysis</b>	<b>Sample Begin</b>		<b>Sample End</b>	Due 2/14/2023
SUB-PFAS	2/1/2023 10:45		02/01/23 10:45	
<i>Containers Supplied:</i>				
250 mL Poly Unpres (A) 250 mL Poly Unpres (B)				

1/31/23 Update to Pace email address  
**\*NEW\* Email PDF Report & Excel EDD to:**  
**ALTO.SubContract@pacelabs.com**  
**For questions call:**  
 Troy Tyler - Ext: 133  
 Michella Fye - Ext: 106

**CLIENT**

Sampled By \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Sampler signatures provided on original COC.



**PACE ANALYTICAL SERVICES, LLC**  
 106 Vantage Point Drive • West Columbia, SC 29172  
 Telephone No. 803-791-9700 Fax No. 803-791-9111  
 www.pacelabs.com

Number 143070

AXB0149

Client <i>Mountain Research LLC</i> <small>(formerly Shealy Environmental Services, Inc.)</small>		Report to Contact <i>Jason Floyal</i>		Telephone No. / E-mail <i>J.Floyal@mountainresearch.com</i>		Quote No.								
Address <i>825 25<sup>th</sup> Street</i>		Sampler's Signature <i>[Signature]</i>		Analysis (Attach list if more space is needed)		Page <i>1</i> of <i>2</i>								
City <i>Altoona</i>	State <i>PA</i>	Zip Code <i>16601</i>	Printed Name <i>Jonathan Cunningham</i>		Lot # Bar Code (Sub use only)									
Project Name <i>PA DEP PFAS Sampling</i>		Remarks / Cooler I.D.												
Project No. <i>5326.23.01</i>	P.O. No.	Matrix		No of Compounds by Preservative Type										
Sample ID / Description <small>(Containers for each sample may be combined on one line.)</small>		Collection Date(s)	Collection Time (M:PM)	Agarose	SO <sub>2</sub>	Ascorbic Acid	Urea	PERM	MSM	ACOH	DATE AC	DATE PERM	PFAS 224.2	
<i>Pre - Purge</i>		<i>02/01/2023</i>	<i>10:30</i>	<i>6</i>	<i>K</i>		<i>4</i>		<i>3</i>				<i>X</i>	<i>2.6</i>
<i>Post - Purge</i>		<i>↓</i>	<i>10:40</i>	<i>6</i>	<i>K</i>		<i>4</i>		<i>3</i>				<i>X X</i>	<i>4.4</i>
<i>Blank</i>		<i>↓</i>	<i>10:45</i>	<i>6</i>	<i>X</i>		<i>2</i>		<i>2</i>				<i>X X</i>	<i>4.9</i>
<i>Trip Blank</i>		<i>1/24/23</i>	<i>1401</i>						<i>2</i>					<i>4.9</i>
														<i>↓</i>

Turn Around Time Required (Prior lab approval required for expedited TAT.) <input type="checkbox"/> Standard <input type="checkbox"/> Rush (Specify)		Sample Disposal <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab		Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison <input type="checkbox"/> Unknown				QC Requirements (Specify)	
1. Relinquished by <i>[Signature]</i>	Date <i>2/1/2023</i>	Time <i>13:51</i>	1. Received by <i>[Signature]</i>	Date <i>2/1/23</i>	Time <i>13:51</i>				
2. Relinquished by	Date	Time	2. Received by	Date	Time				
3. Relinquished by	Date	Time	3. Received by <i>[Signature]</i>	Date <i>2.8.23</i>	Time <i>10:10</i>				
4. Relinquished by <i>[Signature]</i>	Date <i>2.8.23</i>	Time <i>10:10</i>	4.	Date	Time				
Note: All samples are retained for four weeks from receipt unless other arrangements are made.						Temp Blank <input type="checkbox"/> Y <input checked="" type="checkbox"/> N			



AXB0149

Document Number: ME009N2-01

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

PAC





DC# Title: ENV-FRM-WCOL-0286 v02 Samples Receipt Checklist (SRC)  
 Effective Date: 8/2/2022

## Sample Receipt Checklist (SRC)

Client: Pace Cooler Inspected by/date: HRB / 02/10/2023 Lot #: YB10024

Means of receipt:		<input type="checkbox"/> Pace	<input type="checkbox"/> Client	<input type="checkbox"/> UPS	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> Other:
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	1. Were custody seals present on the cooler?				
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA	2. If custody seals were present, were they intact and unbroken?			
pH Strip ID: <u>NA</u>		Chlorine Strip ID: <u>NA</u>		Tested by: <u>NA</u>		
Original temperature upon receipt / Derived (Corrected) temperature upon receipt						%Solid Snap-Cup ID: <u>NA</u>
<u>2.2</u>	<u>/2.2</u>	<u>&gt;C</u>	<u>NA</u>	<u>/NA</u>	<u>&lt;C</u>	<u>NA</u>
Method: <input checked="" type="checkbox"/> Temperature Blank		<input type="checkbox"/> Against Bottles		IR Gun ID: <u>8</u> IR Gun Correction Factor: <u>0</u> °C		
Method of coolant: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ice Packs <input type="checkbox"/> Dry Ice <input type="checkbox"/> None						
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	4. Is the commercial courier's packing slip attached to this form?			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		5. Were proper custody procedures (relinquished/received) followed?			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		6. Were sample IDs listed on the COC and all sample containers?			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		7. Was collection date & time listed on the COC and all sample containers?			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		8. Did all container label information (ID, date, time) agree with the COC?			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		9. Were tests to be performed listed on the COC?			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		11. Was adequate sample volume available?			
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		13. Were all samples containers accounted for? (No missing/excess)			
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA	14. Were VOA, \$015C and RSK-175 samples free of bubbles >"pen-size" (¼" or 6mm in diameter) in any of the VOA vials?			
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?			
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?			
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA	17. Were all applicable NH <sub>3</sub> /TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?			
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> NA	18. Was the quote number listed on the container label? If yes, Quote #			
<b>Sample Preservation</b> (Must be completed for any sample(s) incorrectly preserved or with headspace.)						
Sample(s) <u>NA</u> were received incorrectly preserved and were adjusted accordingly in sample receiving with <u>NA</u> mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # <u>NA</u> . Time of preservation <u>NA</u> . If more than one preservative is needed, please note in the comments below.						
Sample(s) <u>NA</u> were received with bubbles >6 mm in diameter.						
Sample(s) <u>NA</u> were received with TRC > 0.5 mg/L (if #19 is no) and were adjusted accordingly in sample receiving with sodium thiosulfate (Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ) with Unique ID: <u>NA</u> .						
Comments:						



**PACE ANALYTICAL SERVICES, LLC**

106 Vantage Point Drive • West Columbia, SC 29172  
 Telephone No. 803-791-9700 Fax No. 803-791-9111  
 www.pacelabs.com

Number **143070**

AXB0149

**E-FILED**  
 05/08/2023  
 SOUTH CAROLINA ENVIRONMENTAL CONTROL BOARD  
 Page 26 of 27

Client <b>Mountain Research LLC</b>		Report to Contact <b>Jason Floyd</b>				Telephone No. / E-mail <b>J.Floyd@mountainresearch.com</b>				Quote No.					
Address <b>825 25th Street</b>		Sampler's Signature <i>[Signature]</i>				Analysis (Attach list if more space is needed)				Page <u>1</u> of <u>2</u>					
City <b>Altoona</b>	State <b>PA</b>	Zip Code <b>16601</b>		Printed Name <b>Jonathan Cunningham</b>						Lot # Bar Code (lab use only)					
Project Name <b>PA DEP PFAS Sampling</b>															
Project No. <b>5326.23.01</b>		P.O. No.		G-Grab C-Composite	Matrix			No of Containers by Preservative Type					PFAS 524.2	Remarks / Cooler I.D.	
Sample ID / Description (Containers for each sample may be combined on one line.)		Collection Date(s)	Collection Time (Military)		Aqueous	Solid	Non-Aqueous	Unpres.	H2SO4	HNO3	HCl	NaOH			5035 Kit
Pre - Purge		02/01/2023	10:30	G	X		4			3					2.6
Post - Purge		↓	10:40	G	X		4			3					4.4
Blank		↓	10:45	G	X		2			2					4.9
Trip Blank		1/24/23	1401							2					4.9 ↓

RG5

Turn Around Time Required (Prior lab approval required for expedited TAT.) <input type="checkbox"/> Standard <input type="checkbox"/> Rush (Specify)		Sample Disposal <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab		Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison <input type="checkbox"/> Unknown					QC Requirements (Specify)	
1. Relinquished by <i>[Signature]</i>		Date <b>2/1/2023</b>	Time <b>13:51</b>	1. Received by <i>[Signature]</i>					Date <b>2/1/23</b>	Time <b>13:51</b>
2. Relinquished by		Date	Time	2. Received by					Date	Time
3. Relinquished by		Date	Time	3. Received by					Date	Time
4. Relinquished by		Date	Time	4.					Date	Time
Note: All samples are retained for four weeks from receipt unless other arrangements are made.				LA Re					Temp Blank <input type="checkbox"/> Y <input type="checkbox"/> N	







### Chain of Custody Receiving Document

Receiver: EB

Page 2 of 2

Date/Time of this check: 2/1/23 @ 1354 Client: Mountain Research Lab # AXB049

Received on ICE?  \* Sample Temperature when delivered to the Lab: 4.9 °C Acceptable?  \* or In cool down process?  \*

Custody Seals? no Intact? NA

Morning Temperature Verification <6°C (if applicable):

COC/Labels on bottles agree?  \* Correct containers for all the analysis requested?  \* Matrix: water

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCS (Head space?)	Other <input type="checkbox"/> *	Properly Preserved <input type="checkbox"/> *	Bacti	
	250ml										<input checked="" type="checkbox"/> * Internal notification completed for deviations
Pre-purge	4								NA		
Post-purge	4						3 AA/HCL		I		
Blank	2						2 HCL/AA		I		
TB							2-HCL/AA				

<p><b>* DEVIATION PRESENT:</b></p> <p><input checked="" type="checkbox"/> No Ice ( )</p> <p><input checked="" type="checkbox"/> Not at Proper Temperature ( )</p> <p><input checked="" type="checkbox"/> Wrong Container ( )</p> <p><input checked="" type="checkbox"/> Missing Information: ( )</p>	<p><b>CLIENT CALLED:</b></p> <p>YES ( )</p> <p>By Whom: _____</p> <p>Date: _____</p>	<p><b>CLIENT RESPONSE:</b></p> <p>Proceed with analysis; qualify data ( )</p> <p>Will Resample ( )</p> <p>Provided Information ( )</p> <p>No Response; Proceed and qualified ( )</p> <p>Client Contact: _____ Date: _____</p>
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\* Comments: \_\_\_\_\_



## How to Interpret a Water Analysis Report

F 103

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**Bryan R. Swistock, Extension Associate**

**W**hether your water causes illness, stains on plumbing, scaly deposits, or a bad taste, a water analysis (see F 105 *Where to Have Your Water Tested*) identifies the problem and enables you to make knowledgeable decisions about water treatment. What is the significance of the parameters listed in the water test report? This fact sheet outlines some of the major parameters you may see on the analysis and assists you in understanding the report.

### 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 PaDEP 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 CaCo3	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. To find out more about how to treat the water or eliminate the contaminant at the source, see related publication F 103 *How to Interpret a Water Analysis Report*. See the end of this publication for information on how to obtain additional publications.

Table 1 *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.

Table 2 *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.

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

Contaminant	Acceptable Limit	Sources/Uses	Potential Health Effects at High Concentrations
Atrazine	3ppb or .003 ppm	used as a herbicide; surface or groundwater contamination from agricultural runoff or leaching	heart and liver damage
Benzene	5ppb 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	0.01 mg/l	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 <sub>3</sub> )	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-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

\* Recommended level in water at which remedial action should be taken. No mandatory standards have been set.

Table 2. General water quality 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 TU	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.

*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.

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.

### 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 the following sources.

Please access:

Website: <http://wqext.psu.edu>

Email: [mxh16@psu.edu](mailto:mxh16@psu.edu)

Fax: (814) 863-1031

Phone: (814) 865-7685

For more information about other Outreach Publications and Resources from the Department of Agricultural and Biological Engineering:

Website: <http://www.age.psu.edu>

Email: [aqm5@psu.edu](mailto:aqm5@psu.edu)

Address: Penn State

246 Agricultural Engineering Bldg.  
University Park, PA 16802

Phone: (814) 865-7685

Fax: (814) 863-1031

Table 3. Common nuisance contaminants and their effects.

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 <sub>4</sub> )	250 mg/l	greasy feel, laxative effect
Iron Bacteria	present	orangeish to brownish slime in water

Table 4. Hardness classifications.

Concentration of hardness minerals in grains per gallon (GPG)	Hardness Level
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

\* level at which most people find hardness objectionable

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