301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For **Akens Engineering Associates**

Project 240-1-51 Pierson Rheems
Workorder 3224458
Report ID 155427 on 3/14/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jan 27, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3224458001	240-1-51 NPDES 001	Water	01/27/2022 11:00 AM	01/27/2022 11:47 AM	CBC	Collected By Client
3224458002	240-1-51 BM-5	Water	01/27/2022 11:20 AM	01/27/2022 11:47 AM	CBC	Collected By Client
3224458003	240-1-51 BM-4	Water	01/27/2022 10:35 AM	01/27/2022 11:47 AM	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

C	Please reference the Project Summary section of this Certificate of Analysis for case narrative comments.
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation #	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	Analyte was analyzed past the 14 day holding time.
3	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Client Sample ID	**240-1-51 NPDES 001**	Collected	**01/27/2022 11:00 AM**
Lab Sample ID	**3224458001**	Lab Receipt	**01/27/2022 11:47 AM**

Wet Chemistry (General)
Calculation

Prep

Method	N/A	Container	3224458001-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	Calculation	Fraction	
Batch		Dilution	1
Date	03/14/2022 11:31 AM	Analyst	CW

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Net	NALK	192	mg/L		C

Wet Chemistry (General)
SM2310B-2011

Prep

Method	N/A	Container	3224458001-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2310B-2011	Fraction	
Batch	817015	Dilution	1
Date	02/02/2022 10:34 AM	Analyst	KXH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Acidity, Total	ACID-T	9	mg/L	5	C,1

Wet Chemistry (General)
SM2320B-2011

Prep

Method	N/A	Container	3224458001-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	823404	Dilution	1
Date	03/03/2022 12:28 PM	Analyst	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	201	mg/L	5	C,2,3

Wet Chemistry (General)
S2540C-11

Prep

Method	N/A	Container	3224458001-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	816207	Dilution	1
Date	02/02/2022 6:41 AM	Analyst	SMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers

Client Sample ID	**240-1-51 NPDES 001**	Collected	**01/27/2022 11:00 AM**
Lab Sample ID	**3224458001**	Lab Receipt	**01/27/2022 11:47 AM**

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	374	mg/L	25	C

Wet Chemistry (General)
S2540D-11

Prep

Method	N/A	Container	3224458001-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540D-11	Fraction	
Batch	816989	Dilution	1
Date	02/02/2022 12:28 PM	Analyst	KMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Suspended Solids	TSS	5	mg/L	5	C

Client Sample ID	**240-1-51 BM-5**	Collected	**01/27/2022 11:20 AM**
Lab Sample ID	**3224458002**	Lab Receipt	**01/27/2022 11:47 AM**

Wet Chemistry (General)
Calculation

Prep

Method	N/A	Container	3224458002-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	Calculation	Fraction	
Batch		Dilution	1
Date	03/14/2022 11:32 AM	Analyst	CW

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Net	NALK	57.0	mg/L		C

Wet Chemistry (General)
SM2310B-2011

Prep

Method	N/A	Container	3224458002-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2310B-2011	Fraction	
Batch	817015	Dilution	1
Date	02/02/2022 10:34 AM	Analyst	KXH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Acidity, Total	ACID-T	5	mg/L	5	C,1

Wet Chemistry (General)
SM2320B-2011

Prep

Method	N/A	Container	3224458002-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	823404	Dilution	1
Date	03/03/2022 12:36 PM	Analyst	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	62	mg/L	5	C,2,3

Wet Chemistry (General)
S2540C-11

Prep

Method	N/A	Container	3224458002-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	816207	Dilution	1
Date	02/02/2022 6:41 AM	Analyst	SMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers

Client Sample ID	**240-1-51 BM-5**	Collected	**01/27/2022 11:20 AM**
Lab Sample ID	**3224458002**	Lab Receipt	**01/27/2022 11:47 AM**

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	182	mg/L	25	C

Wet Chemistry (General)
S2540D-11

Prep

Method	N/A	Container	3224458002-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540D-11	Fraction	
Batch	816989	Dilution	1
Date	02/02/2022 12:28 PM	Analyst	KMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Suspended Solids	TSS	6	mg/L	5	C

Client Sample ID	**240-1-51 BM-4**	Collected	**01/27/2022 10:35 AM**
Lab Sample ID	**3224458003**	Lab Receipt	**01/27/2022 11:47 AM**

Wet Chemistry (General)
Calculation

Prep

Method	N/A	Container	3224458003-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	Calculation	Fraction	
Batch		Dilution	1
Date	03/14/2022 11:33 AM	Analyst	CW

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Net	NALK	153	mg/L		C

Wet Chemistry (General)
SM2310B-2011

Prep

Method	N/A	Container	3224458003-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2310B-2011	Fraction	
Batch	817015	Dilution	1
Date	02/02/2022 10:34 AM	Analyst	KXH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Acidity, Total	ACID-T	7	mg/L	5	C,1

Wet Chemistry (General)
SM2320B-2011

Prep

Method	N/A	Container	3224458003-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	823404	Dilution	1
Date	03/03/2022 12:47 PM	Analyst	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	161	mg/L	5	C,2,3

Wet Chemistry (General)
S2540C-11

Prep

Method	N/A	Container	3224458003-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	816207	Dilution	1
Date	02/02/2022 6:41 AM	Analyst	SMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers

Client Sample ID	**240-1-51 BM-4**	Collected	**01/27/2022 10:35 AM**
Lab Sample ID	**3224458003**	Lab Receipt	**01/27/2022 11:47 AM**

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	338	mg/L	25	C

Wet Chemistry (General)
S2540D-11

Prep

Method	N/A	Container	3224458003-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540D-11	Fraction	
Batch	816989	Dilution	1
Date	02/02/2022 12:28 PM	Analyst	KMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Suspended Solids	TSS	17	mg/L	5	C

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3224458001	240-1-51 NPDES 001	Calculation	N/A	
		S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3224458002	240-1-51 BM-5	Calculation	N/A	
		S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3224458003	240-1-51 BM-4	Calculation	N/A	
		S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

3/14/2022 11:54 AM

301 Fulling Mill Rd
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

CO
AL

3224458
Logged By: NRL
PM: DMG

of

Client Name: Akens Engineering Associates, Inc.

Address: 219 East Main Street, Shiremanstown, PA 17011

Contact: Rick Caranfa

Phone#: 717-975-9933

Project Name/#: 240-1-51 Pierson Rheems

Bill To:

TAT [x] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: **Approved?**

Email? [x] -Y rick@akensengineering.com

Fax? [ ] -Y No.:

		Container Type	PL								
		Container Size	1 L								
		Perservative	None								
		ANALYSES/METHOD REQUESTED									

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity, Alkalinity								
						Enter Number of Containers Per S								
1	240-1-51 NPDES 001	1-27-22	1100	G	GW	1 ✓								
~~2~~	~~240-1-51 NPDES 002~~			G	GW									
3	240-1-51 BM-5	1-27-22	1120	G	GW	1 ✓								
4	240-1-51 BM-4	1-27-22	1035	G	GW	1 ✓								
~~5~~	~~240-1-51 BM-3~~			G	GW									
~~6~~	~~240-1-51 BM-7~~			G	GW									
7														
8														
9														
10														

Temp Taken By: JW
WO Temp (°C) 5
Therm ID: 575
Receipt Info Completed By: JW
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N NA
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N NA
Voa Trip Blank Y N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:

SDWA Compliance Y N
PWSID

(completed by Receiving Lab)

W.O. Temp: 5 Therm ID: 575
Courier/Tracking #:
Purchase Order #:
Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments

pH 7.84 Temp 47.6 °F
No Discharge
pH 7.31 Temp 42.8°F
pH 7.62 Temp 41.1
pH Temp
pH Temp

Print Name:

Sampler Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1		1-27	1147	2	ALS	1/27/22	1147
3				4			
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]

Special Processing: USACE [ ] Navy [ ] [ ]

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other

Reportable to PADEP? Yes [ ] No [ ]

PWSID #

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type-

* G=Grab; C=Composite

**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, MIDDLETOWN, PA 17057

Rev 11/18

12 of 12

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For **Akens Engineering Associates**

Project 240-1-51 Pierson Rheems
Workorder 3228926
Report ID 154645 on 3/10/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Feb 23, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3228926001	240-1-51 NPDES 001	Water	02/23/2022 1:30 PM	02/23/2022 1:54 PM	CBC	Collected By Client
3228926002	240-1-51 BM-5	Water	02/23/2022 12:45 PM	02/23/2022 1:54 PM	CBC	Collected By Client
3228926003	240-1-51 BM-4	Water	02/23/2022 10:15 AM	02/23/2022 1:54 PM	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

C	Please reference the Project Summary section of this Certificate of Analysis for case narrative comments.
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

Project Notations

Sample Notations

Lab ID	Sample ID	
3228926002	240-1-51 BM-5	Sample temperature upon receipt at lab was greater than 6 ºC.
3228926003	240-1-51 BM-4	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation #	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Client Sample ID	**240-1-51 NPDES 001**	Collected	**02/23/2022 1:30 PM**
Lab Sample ID	**3228926001**	Lab Receipt	**02/23/2022 1:54 PM**

Wet Chemistry (General)
SM2310B-2011

Prep

Method	N/A	Container	3228926001-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2310B-2011	Fraction	
Batch	822607	Dilution	1
Date	03/02/2022 9:22 AM	Analyst	KXH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Acidity, Total	ACID-T	10	mg/L	5	C,1

Wet Chemistry (General)
SM2320B-2011

Prep

Method	N/A	Container	3228926001-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	822361	Dilution	1
Date	02/24/2022 9:11 PM	Analyst	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	221	mg/L	5	C,2

Wet Chemistry (General)
S2540C-11

Prep

Method	N/A	Container	3228926001-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	822392	Dilution	1
Date	02/28/2022 8:54 AM	Analyst	SMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	518	mg/L	25	C

Wet Chemistry (General)
S2540D-11

Prep

Method	N/A	Container	3228926001-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540D-11	Fraction	
Batch	822832	Dilution	1
Date	02/28/2022 9:28 AM	Analyst	KMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers

Client Sample ID	**240-1-51 NPDES 001**	Collected	**02/23/2022 1:30 PM**
Lab Sample ID	**3228926001**	Lab Receipt	**02/23/2022 1:54 PM**

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Suspended Solids	TSS	16	mg/L	5	c

Client Sample ID	**240-1-51 BM-5**	Collected	**02/23/2022 12:45 PM**
Lab Sample ID	**3228926002**	Lab Receipt	**02/23/2022 1:54 PM**

Wet Chemistry (General)
SM2310B-2011

Prep

Method	N/A	Container	3228926002-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2310B-2011	Fraction	
Batch	822607	Dilution	1
Date	03/02/2022 9:22 AM	Analyst	KXH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Acidity, Total	ACID-T	ND	mg/L	5	C,ND,1

Wet Chemistry (General)
SM2320B-2011

Prep

Method	N/A	Container	3228926002-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	822361	Dilution	1
Date	02/24/2022 9:21 PM	Analyst	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	60	mg/L	5	C,2

Wet Chemistry (General)
S2540C-11

Prep

Method	N/A	Container	3228926002-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	822392	Dilution	1
Date	02/28/2022 8:54 AM	Analyst	SMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	310	mg/L	25	C

Wet Chemistry (General)
S2540D-11

Prep

Method	N/A	Container	3228926002-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540D-11	Fraction	
Batch	822832	Dilution	1
Date	02/28/2022 9:28 AM	Analyst	KMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers

Client Sample ID	**240-1-51 BM-5**	Collected	**02/23/2022 12:45 PM**
Lab Sample ID	**3228926002**	Lab Receipt	**02/23/2022 1:54 PM**

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Suspended Solids	TSS	28	mg/L	5	c

Client Sample ID	**240-1-51 BM-4**	Collected	**02/23/2022 10:15 AM**
Lab Sample ID	**3228926003**	Lab Receipt	**02/23/2022 1:54 PM**

Wet Chemistry (General)
SM2310B-2011

Prep

Method	N/A	Container	3228926003-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2310B-2011	Fraction	
Batch	822607	Dilution	1
Date	03/02/2022 9:22 AM	Analyst	KXH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Acidity, Total	ACID-T	ND	mg/L	5	C,ND,1

Wet Chemistry (General)
SM2320B-2011

Prep

Method	N/A	Container	3228926003-A(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	822361	Dilution	1
Date	02/24/2022 9:31 PM	Analyst	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	198	mg/L	5	C,2

Wet Chemistry (General)
S2540C-11

Prep

Method	N/A	Container	3228926003-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	822849	Dilution	1
Date	02/28/2022 12:17 PM	Analyst	SMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	406	mg/L	25	C

Wet Chemistry (General)
S2540D-11

Prep

Method	N/A	Container	3228926003-A(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540D-11	Fraction	
Batch	822832	Dilution	1
Date	02/28/2022 9:28 AM	Analyst	KMS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers

Client Sample ID	**240-1-51 BM-4**	Collected	**02/23/2022 10:15 AM**
Lab Sample ID	**3228926003**	Lab Receipt	**02/23/2022 1:54 PM**

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Suspended Solids	TSS	13	mg/L	5	c

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3228926001	240-1-51 NPDES 001	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3228926002	240-1-51 BM-5	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3228926003	240-1-51 BM-4	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

3/10/2022 3:57 PM

301 Fulling Mill Rd
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #

ALS C

3228926

Logged By: NRL
PM: DMG

of

Client Name: Akens Engineering Associates, Inc.

Address: 219 East Main Street, Shiremanstown, PA 17011

Contact: Rick Caranfa

Phone#: 717-975-9933

Project Name/#: 240-1-51 Pierson Rheems

Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: **Approved?**

Email? [X] -Y rick@akensengineering.com

Fax? [ ] -Y No.:

	Container Type	PL									
	Container Size	1 L									
	Perservative	None									

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity, Alkalinity									
						Enter Number of Conta									
1	240-1-51 NPDES 001	2-23-22	1330	G	GW	✓									
2	240-1-51 NPDES 002			G	GW	DRY									
3	240-1-51 BM-5	2-23-22	1245	G	GW	✓									
4	240-1-51 BM-4	2-23-22	1015	G	GW	✓									
5	240-1-51 BM-3			G	GW	DRY									
6	240-1-51 BM-7			G	GW										
7															
8															
9															
10															

Temp Taken By: Amy C.
WO Temp (°C) 9°C
Therm ID: 575
Receipt Info Completed By: AEC

Cooler Custody Seal Intact	Y N	NA
Sample Custody Seal Intact	Y N	NA
Received on Ice	Y N	NA
Cooler & Samples Intact	Y N	
Correct Containers Provided	Y N	
Sample Label/COC Agree	Y N	
Adequate Sample Volumes	Y N	
VOA Headspace Present	Y N	NA
Voa Trip Blank	Y N	NA
NJ≤ 4 Days?		
Rad Screen (uCi)		
Courier/Tracking #:		
SDWA Compliance	Y N	
PWSID		

(completed by Receiving Lab)

W.O. Temp: 9°C Therm ID: 575

Courier/Tracking #:

Purchase Order #:

Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments

pH 7.76 Temp 58.9
No Discharge
pH 7.38 Temp 65.1
pH 7.62 Temp 42.2
pH Temp
pH Temp
pH Temp

Print Name:

Sampler Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1		2-23-22	1354	2	Amy Galett ACS	2/23/22	1354
3				4			
5				6			
				8			
				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]

Special Processing: USACE [ ] Navy [ ] [ ]

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other

Reportable to PADEP? Yes [ ] No [ ]

PWSID #

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type-

* G=Grab; C=Composite

**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, MIDDLETOWN, PA 17057

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301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For **Akens Engineering Associates**

Project 240-1-51 Pierson Rheems
Workorder 3232519
Report ID 159541 on 4/1/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Mar 16, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3232519001	240-1-51 NPDES 001	Water	03/16/2022 10:45 AM	03/16/2022 11:37 AM	CBC	Collected By Client
3232519002	240-1-51 BM-4	Water	03/16/2022 11:20 AM	03/16/2022 11:37 AM	CBC	Collected By Client
3232519003	240-1-51 BM-5	Water	03/16/2022 9:45 AM	03/16/2022 11:37 AM	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3232519002	240-1-51 BM-4	**S1**	Sample temperature upon receipt at lab was greater than 6 ºC.
		S2	Sample temperature upon receipt at lab was greater than 6 ºC.
3232519003	240-1-51 BM-5	**S3**	Sample temperature upon receipt at lab was greater than 6 ºC.
		S4	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
3	This sample was analyzed after the 14 day holding time for Alkalinity as required by the method.

Detected Results Summary

Project 240-1-51 Pierson Rheems
Workorder 3232519

Client Sample ID	**240-1-51 NPDES 001**	Collected	**03/16/2022 10:45 AM**
Lab Sample ID	**3232519001**	Lab Receipt	**03/16/2022 11:37 AM**

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	12	mg/L	5	SM2310B-2011	#
Alkalinity, Total	220	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	446	mg/L	25	S2540C-11	#
Total Suspended Solids	5	mg/L	5	S2540D-11	#

Client Sample ID	**240-1-51 BM-4**	Collected	**03/16/2022 11:20 AM**
Lab Sample ID	**3232519002**	Lab Receipt	**03/16/2022 11:37 AM**

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Alkalinity, Total	55	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	204	mg/L	25	S2540C-11	#
Total Suspended Solids	8	mg/L	5	S2540D-11	#

Client Sample ID	**240-1-51 BM-5**	Collected	**03/16/2022 9:45 AM**
Lab Sample ID	**3232519003**	Lab Receipt	**03/16/2022 11:37 AM**

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	9	mg/L	5	SM2310B-2011	#
Alkalinity, Total	198	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	412	mg/L	25	S2540C-11	#
Total Suspended Solids	20	mg/L	5	S2540D-11	#

Project 240-1-51 Pierson Rheems
Workorder 3232519

Client Sample ID	**240-1-51 NPDES 001**	Collected	**03/16/2022 10:45 AM**
Lab Sample ID	**3232519001**	Lab Receipt	**03/16/2022 11:37 AM**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Alkalinity, Total	220	2,3	mg/L	5	SM2320B-2011		N/A	03/31/2022	BXD	A
Total Suspended Solids	5		mg/L	5	S2540D-11		N/A	03/17/2022	KMS	A
Acidity, Total	12	1	mg/L	5	SM2310B-2011		N/A	03/18/2022	KXH	A
Total Dissolved Solids	446		mg/L	25	S2540C-11		N/A	03/21/2022	SMS	A

Client Sample ID	**240-1-51 BM-4**	Collected	**03/16/2022 11:20 AM**
Lab Sample ID	**3232519002**	Lab Receipt	**03/16/2022 11:37 AM**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Alkalinity, Total	55	2,3,S1,S2	mg/L	5	SM2320B-2011		N/A	03/31/2022	BXD	A
Acidity, Total	ND	ND,1,S1,S2	mg/L	5	SM2310B-2011		N/A	03/18/2022	KXH	A
Total Suspended Solids	8	S1,S2	mg/L	5	S2540D-11		N/A	03/17/2022	KMS	A
Total Dissolved Solids	204	S1,S2	mg/L	25	S2540C-11		N/A	03/21/2022	SMS	A

Client Sample ID	**240-1-51 BM-5**	Collected	**03/16/2022 9:45 AM**
Lab Sample ID	**3232519003**	Lab Receipt	**03/16/2022 11:37 AM**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Alkalinity, Total	198	2,3,S3,S4	mg/L	5	SM2320B-2011		N/A	03/31/2022	BXD	A
Acidity, Total	9	1,S3,S4	mg/L	5	SM2310B-2011		N/A	03/18/2022	KXH	A
Total Suspended Solids	20	S3,S4	mg/L	5	S2540D-11		N/A	03/17/2022	KMS	A
Total Dissolved Solids	412	S3,S4	mg/L	25	S2540C-11		N/A	03/21/2022	SMS	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3232519001	240-1-51 NPDES 001	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3232519002	240-1-51 BM-4	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3232519003	240-1-51 BM-5	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

301 Fulling Mill Rd
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC # 3232519

Logged By: AEC
PM: GJM

ALS Q

of

Client Name: Akens Engineering Associates, Inc.

Address: 219 East Main Street, Shiremanstown, PA 17011

Contact: Rick Caranfa

Phone#: 717-975-9933

Project Name/#: 240-1-51 Pierson Rheems

Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: Approved?

Email? [X] -Y rick@akensengineering.com

Fax? [ ] -Y No.:

	Container Type	PL	PL								
	Container Size	1 L	250 ml								
	Perservative	None	None								

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity	Alkalinity	Enter Number of Cont
1	240-1-51 NPDES 001	3/16/22	[illegible]	G	GW	1	1	
2	240-1-51 NPDES 002		1045	G	GW			
3	240-1-51 BM-4	3/16/22	1120	G	GW	1	1	
4	240-1-51 BM-5	3/16/22	0945	G	GW	1	1	
5	240-1-51 BM-3		[illegible]	G	GW			
6	240-1-51 BM-7			G	GW			
7								
8								
9								
10								

Temp Taken By: SA
WO Temp (°C): 8°
Therm ID: 575
Receipt Info Completed By: SA
Cooler Custody Seal Intact: Y N NA
Sample Custody Seal Intact: Y N NA
Received on Ice: Y N NA
Cooler & Samples Intact: Y N
Correct Containers Provided: Y N
Sample Label/COC Agree: Y N
Adequate Sample Volumes: Y N
VOA Headspace Present: Y N NA
Voa Trip Blank: Y N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:
SDWA Compliance: Y N
PWSID

(completed by Receiving Lab)

W.O. Temp: 8° Therm ID: 575

Courier/Tracking #:

Purchase Order #:

Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments

pH 7.82 Temp 49.1
No Discharge
pH 7.81 Temp 50.2
pH 7.73 Temp 47.8
pH Temp
pH Temp

Print Name:

Sampler Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	[signature] / Akens	3/16/22	1137	2	SA / ALS	3/16/22	1137
3				4			
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]

Special Processing: USACE [ ] Navy [ ]

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other

Reportable to PADEP? Yes [ ] No [ ]

PWSID #

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type-

* G=Grab; C=Composite

**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, MIDDLETOWN, PA 17057

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

Akens Engineering Associates

Project 240-1-51 Pierson Rheems
Workorder 3239533
Report ID 166964 on 5/4/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Apr 27, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3239533001	240-1-51 NPDES 001	Water	04/27/2022 10:40	04/27/2022 11:10	CBC	Collected By Client
3239533002	240-1-51 BM-5	Water	04/27/2022 10:50	04/27/2022 11:10	CBC	Collected By Client
3239533003	240-1-51 BM-4	Water	04/27/2022 10:20	04/27/2022 11:10	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3239533001	240-1-51 NPDES 001	S1	Sample temperature upon receipt at lab was greater than 6 ºC.
3239533002	240-1-51 BM-5	S2	Sample temperature upon receipt at lab was greater than 6 ºC.
3239533003	240-1-51 BM-4	S3	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Detected Results Summary

Client Sample ID	240-1-51 NPDES 001	Collected	04/27/2022 10:40
Lab Sample ID	3239533001	Lab Receipt	04/27/2022 11:10

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	18	mg/L	5	SM2310B-2011	#
Alkalinity, Total	237	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	434	mg/L	25	S2540C-11	#
Total Suspended Solids	13	mg/L	5	S2540D-11	#

Detected Results Summary

Client Sample ID	240-1-51 BM-5	Collected	04/27/2022 10:50
Lab Sample ID	3239533002	Lab Receipt	04/27/2022 11:10

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	6	mg/L	5	SM2310B-2011	#
Alkalinity, Total	70	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	183	mg/L	25	S2540C-11	#
Total Suspended Solids	7	mg/L	5	S2540D-11	#

Detected Results Summary

Client Sample ID	240-1-51 BM-4	Collected	04/27/2022 10:20
Lab Sample ID	3239533003	Lab Receipt	04/27/2022 11:10

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	8	mg/L	5	SM2310B-2011	#
Alkalinity, Total	205	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	342	mg/L	25	S2540C-11	#
Total Suspended Solids	18	mg/L	5	S2540D-11	#

Results

Client Sample ID	240-1-51 NPDES 001	Collected	04/27/2022 10:40
Lab Sample ID	3239533001	Lab Receipt	04/27/2022 11:10

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	18	1,S1	mg/L	5	SM2310B-2011	1	05/04/2022 13:17	KXH	A
Alkalinity, Total	237	2,S1	mg/L	5	SM2320B-2011	1	04/28/2022 14:15	BXD	A
Total Dissolved Solids	434	S1	mg/L	25	S2540C-11	1	04/29/2022 08:42	SMS	A
Total Suspended Solids	13	S1	mg/L	5	S2540D-11	1	04/28/2022 13:49	KMS	A

Results

Client Sample ID	240-1-51 BM-5	Collected	04/27/2022 10:50
Lab Sample ID	3239533002	Lab Receipt	04/27/2022 11:10

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	6	1,S2	mg/L	5	SM2310B-2011	1	05/04/2022 13:17	KXH	A
Alkalinity, Total	70	2,S2	mg/L	5	SM2320B-2011	1	04/28/2022 14:24	BXD	A
Total Dissolved Solids	183	S2	mg/L	25	S2540C-11	1	04/29/2022 08:42	SMS	A
Total Suspended Solids	7	S2	mg/L	5	S2540D-11	1	04/28/2022 13:49	KMS	A

Results

Client Sample ID	240-1-51 BM-4	Collected	04/27/2022 10:20
Lab Sample ID	3239533003	Lab Receipt	04/27/2022 11:10

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	8	1,S3	mg/L	5	SM2310B-2011	1	05/04/2022 13:17	KXH	A
Alkalinity, Total	205	2,S3	mg/L	5	SM2320B-2011	1	04/28/2022 14:34	BXD	A
Total Dissolved Solids	342	S3	mg/L	25	S2540C-11	1	04/29/2022 08:42	SMS	A
Total Suspended Solids	18	S3	mg/L	5	S2540D-11	1	04/28/2022 13:49	KMS	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3239533001	240-1-51 NPDES 001	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3239533002	240-1-51 BM-5	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3239533003	240-1-51 BM-4	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3239533001	240-1-51 NPDES 001	N/A	N/A	N/A		S2540C-11	842895
		N/A	N/A	N/A		S2540D-11	842995
		N/A	N/A	N/A		SM2310B-2011	844417
		N/A	N/A	N/A		SM2320B-2011	842945
3239533002	240-1-51 BM-5	N/A	N/A	N/A		S2540C-11	842895
		N/A	N/A	N/A		S2540D-11	842995
		N/A	N/A	N/A		SM2310B-2011	844417
		N/A	N/A	N/A		SM2320B-2011	842945
3239533003	240-1-51 BM-4	N/A	N/A	N/A		S2540C-11	842895
		N/A	N/A	N/A		S2540D-11	842995
		N/A	N/A	N/A		SM2310B-2011	844417
		N/A	N/A	N/A		SM2320B-2011	842945

5/4/2022 4:11 PM

301 Fulling Mill Rd
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3239533

ALS Quote

Logged By: AXF
PM: GJM

Client Name: Akens Engineering Associates, Inc.

Address: 219 East Main Street, Shiremanstown, PA 17011

Contact: Rick Caranfa

Phone#: 717-975-9933

Project Name/#: 240-1-51 Pierson Rheems

Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: **Approved?**

Email? [X] -Y rick@akensengineering.com

Fax? [ ] -Y No.:

	Container Type	PL	PL
	Container Size	1 L	250 ml
	Perservative	None	None

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity	Alkalinity	Enter Number of Co
1	240-1-51 NPDES 001	4-27-22	1040	G	GW	1	1	
2	240-1-51 NPDES 002			G	GW			
3	240-1-51 BM-5	4-27-22	1050	G	GW	1	1	
4	240-1-51 BM-4	4-27-22	1020	G	GW	1	1	
5	240-1-51 BM-3			G	GW			
6	240-1-51 BM-7			G	GW			
7								
8								
9								
10								

Temp Taken By: AMRF
WO Temp (°C) 10°
Therm ID: 575
Receipt Info Completed By: AMRF
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N NA
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N NA
Voa Trip Blank Y N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:
SDWA Compliance Y N
PWSID

(completed by Receiving Lab)

W.O. Temp: 10° Therm ID: 575

Courier/Tracking #:

Purchase Order #:

Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments

pH 7.81 Temp 52.1
No Discharge
pH 7.42 Temp 49.2
pH 7.71 Temp 48.7
pH Temp
pH Temp

Print Name:

Sampler Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Chuck Mylar / Akens	4-27-22	1110	2 AMRF / ALS	4/27/22	18:10
3			4		
5			6		
7			8		
9			10		

Data Deliverables [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]

Special Processing USACE [ ] Navy [ ]

State Samples Collected In [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other

Reportable to PADEP? Yes [ ] No [ ]
PWSID #

Sample Disposal Lab [ ] Special [ ]

EDDS: Format Type-

* G=Grab; C=Composite

**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, MIDDLETOWN, PA 17057

Rev 11/18

301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

Akens Engineering Associates

Project 240-1-51 Pierson Rheems
Workorder 3242949
Report ID 170529 on 5/23/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on May 16, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3242949001	240-1-51 NPDES 001	Water	05/16/2022 09:10	05/16/2022 13:00	CBC	Collected By Client
3242949002	240-1-51 BM-5	Water	05/16/2022 11:30	05/16/2022 13:00	CBC	Collected By Client
3242949003	240-1-51 BM-4	Water	05/16/2022 11:00	05/16/2022 13:00	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3242949001	240-1-51 NPDES 001	**S1**	Sample temperature upon receipt at lab was greater than 6 ºC.
3242949002	240-1-51 BM-5	**S2**	Sample temperature upon receipt at lab was greater than 6 ºC.
3242949003	240-1-51 BM-4	**S3**	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Detected Results Summary

Client Sample ID	240-1-51 NPDES 001	Collected	05/16/2022 09:10
Lab Sample ID	3242949001	Lab Receipt	05/16/2022 13:00

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	22	mg/L	5	SM2310B-2011	#
Alkalinity, Total	237	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	478	mg/L	25	S2540C-11	#
Total Suspended Solids	7	mg/L	5	S2540D-11	#

Detected Results Summary

Client Sample ID	240-1-51 BM-5	Collected	05/16/2022 11:30
Lab Sample ID	3242949002	Lab Receipt	05/16/2022 13:00

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	9	mg/L	5	SM2310B-2011	#
Alkalinity, Total	69	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	197	mg/L	25	S2540C-11	#
Total Suspended Solids	7	mg/L	5	S2540D-11	#

Detected Results Summary

Client Sample ID	240-1-51 BM-4	Collected	05/16/2022 11:00
Lab Sample ID	3242949003	Lab Receipt	05/16/2022 13:00

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	8	mg/L	5	SM2310B-2011	#
Alkalinity, Total	238	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	440	mg/L	25	S2540C-11	#
Total Suspended Solids	8	mg/L	5	S2540D-11	#

Results

Client Sample ID	240-1-51 NPDES 001	Collected	05/16/2022 09:10
Lab Sample ID	3242949001	Lab Receipt	05/16/2022 13:00

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	22	1,S1	mg/L	5	SM2310B-2011	1	05/17/2022 09:55	KXH	A
Alkalinity, Total	237	2,S1	mg/L	5	SM2320B-2011	1	05/18/2022 15:52	BXD	A
Total Dissolved Solids	478	S1	mg/L	25	S2540C-11	1	05/18/2022 10:31	SMS	A
Total Suspended Solids	7	S1	mg/L	5	S2540D-11	1	05/18/2022 13:45	KMS	A

Results

Client Sample ID	240-1-51 BM-5	Collected	05/16/2022 11:30
Lab Sample ID	3242949002	Lab Receipt	05/16/2022 13:00

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	9	1,S2	mg/L	5	SM2310B-2011	1	05/17/2022 09:55	KXH	A
Alkalinity, Total	69	2,S2	mg/L	5	SM2320B-2011	1	05/18/2022 16:01	BXD	A
Total Dissolved Solids	197	S2	mg/L	25	S2540C-11	1	05/18/2022 10:31	SMS	A
Total Suspended Solids	7	S2	mg/L	5	S2540D-11	1	05/18/2022 13:45	KMS	A

Results

Client Sample ID	240-1-51 BM-4	Collected	05/16/2022 11:00
Lab Sample ID	3242949003	Lab Receipt	05/16/2022 13:00

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	8	1,S3	mg/L	5	SM2310B-2011	1	05/17/2022 09:55	KXH	A
Alkalinity, Total	238	2,S3	mg/L	5	SM2320B-2011	1	05/18/2022 16:11	BXD	A
Total Dissolved Solids	440	S3	mg/L	25	S2540C-11	1	05/18/2022 10:31	SMS	A
Total Suspended Solids	8	S3	mg/L	5	S2540D-11	1	05/18/2022 13:45	KMS	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3242949001	240-1-51 NPDES 001	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3242949002	240-1-51 BM-5	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3242949003	240-1-51 BM-4	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3242949001	240-1-51 NPDES 001	N/A	N/A	N/A		S2540C-11	848240
		N/A	N/A	N/A		S2540D-11	848343
		N/A	N/A	N/A		SM2310B-2011	847903
		N/A	N/A	N/A		SM2320B-2011	848310
3242949002	240-1-51 BM-5	N/A	N/A	N/A		S2540C-11	848240
		N/A	N/A	N/A		S2540D-11	848343
		N/A	N/A	N/A		SM2310B-2011	847903
		N/A	N/A	N/A		SM2320B-2011	848310
3242949003	240-1-51 BM-4	N/A	N/A	N/A		S2540C-11	848240
		N/A	N/A	N/A		S2540D-11	848343
		N/A	N/A	N/A		SM2310B-2011	847903
		N/A	N/A	N/A		SM2320B-2011	848310

5/23/2022 9:54 AM

301 Fulling Mill Rd
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3242949

ALS Qu

Logged By: AXF
PM: GJM

of 1

Client Name: Akens Engineering Associates, Inc.

Address: 219 East Main Street, Shiremanstown, PA 17011

Contact: Rick Caranfa

Phone#: 717-975-9933

Project Name/#: 240-1-51 Pierson Rheems

Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: **Approved?**

Email? [X] -Y rick@akensengineering.com

Fax? [ ] -Y No.:

	Container Type	PL	PL								
	Container Size	1 L	250 ml								
	Perservative	None	None								

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity	Alkalinity								
				Enter Number of Containers Per S											
1	240-1-51 NPDES 001	5/16/22	9:10	G	GW	1	1								
2	240-1-51 NPDES 002			G	GW										
3	240-1-51 BM-5	5/16/22	11:30	G	GW	1	1								
4	240-1-51 BM-4	5/16/22	11:00	G	GW	1	1								
5	240-1-51 BM-3			G	GW										
6	240-1-51 BM-7			G	GW										
7															
8															
9															
10															

Temp Taken By: JW
WO Temp (°C) 7
Therm ID: 575
Receipt Info Completed By: JW
Cooler Custody Seal Intact Y N (NA)
Sample Custody Seal Intact Y N NA
Received on Ice (Y) N NA
Cooler & Samples Intact (Y) N
Correct Containers Provided (Y) N
Sample Label/COC Agree (Y) N
Adequate Sample Volumes (Y) N
VOA Headspace Present Y N (NA)
Voa Trip Blank Y N (NA)
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:

SDWA Compliance Y (N)
PWSID

Receipt Information (completed by Receiving Lab)

W.O. Temp: 7 Therm ID: 575
Courier/Tracking #:
Purchase Order #:
Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments

pH 7.3 Temp 16.9 SC 680
No Discharge
pH 7.2 Temp 19.7 SC 260
pH 7.9 Temp 19.1 SC 640
~~pH~~ ~~Temp~~ No Discharge
~~pH~~ ~~Temp~~ No Discharge

Print Name: Rick Caranfa

Sampler Comments: BM-5 50 GPM

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Rick Caranfa Akens	5/16/22	13:00	2 ALS	5/16/22	1300
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]

Special Processing: USACE [ ] Navy [ ]

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other

Reportable to PADEP? Yes [ ] No [ ]

PWSID #

Sample Disposal: Lab [ ] Specia [ ]

EDDS: Format Type-

* G=Grab; C=Composite

**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, MIDDLETOWN, PA 17057

Rev 11/18

13 of 13

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

Akens Engineering Associates

Project Pennsy Small Mt. 1-35-39
Workorder 3250730
Report ID 180491 on 7/8/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jun 30, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3250730001	240-1-51 NPDES 002	Water	06/30/2022 09:35	06/30/2022 10:05	CBC	Collected By Client
3250730002	240-1-51 BM-5	Water	06/30/2022 09:25	06/30/2022 10:05	CBC	Collected By Client
3250730003	240-1-51 BM-4	Water	06/30/2022 09:50	06/30/2022 10:05	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3250730001	240-1-51 NPDES 002	**S1**	Sample temperature upon receipt at lab was greater than 6 ºC.
3250730002	240-1-51 BM-5	**S2**	Sample temperature upon receipt at lab was greater than 6 ºC.
3250730003	240-1-51 BM-4	**S3**	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Detected Results Summary

Client Sample ID	240-1-51 NPDES 002	Collected	06/30/2022 09:35
Lab Sample ID	3250730001	Lab Receipt	06/30/2022 10:05

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	6	mg/L	5	SM2310B-2011	#
Alkalinity, Total	237	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	416	mg/L	25	S2540C-11	#
Total Suspended Solids	9	mg/L	5	S2540D-11	#

Detected Results Summary

Client Sample ID	240-1-51 BM-5	Collected	06/30/2022 09:25
Lab Sample ID	3250730002	Lab Receipt	06/30/2022 10:05

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Alkalinity, Total	233	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	412	mg/L	25	S2540C-11	#
Total Suspended Solids	6	mg/L	5	S2540D-11	#

Detected Results Summary

Client Sample ID	240-1-51 BM-4	Collected	06/30/2022 09:50
Lab Sample ID	3250730003	Lab Receipt	06/30/2022 10:05

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Alkalinity, Total	111	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	244	mg/L	25	S2540C-11	#

Results

Client Sample ID	**240-1-51 NPDES 002**	Collected	**06/30/2022 09:35**
Lab Sample ID	**3250730001**	Lab Receipt	**06/30/2022 10:05**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	6	1,S1	mg/L	5	SM2310B-2011	1	07/05/2022 12:53	KXH	A
Alkalinity, Total	237	2,S1	mg/L	5	SM2320B-2011	1	07/06/2022 18:27	BXD	A
Total Dissolved Solids	416	S1	mg/L	25	S2540C-11	1	07/05/2022 07:27	SMS	A
Total Suspended Solids	9	S1	mg/L	5	S2540D-11	1	07/01/2022 14:30	JML	A

Results

Client Sample ID	**240-1-51 BM-5**	Collected	**06/30/2022 09:25**
Lab Sample ID	**3250730002**	Lab Receipt	**06/30/2022 10:05**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	ND	ND,1,S2	mg/L	5	SM2310B-2011	1	07/05/2022 12:53	KXH	A
Alkalinity, Total	233	2,S2	mg/L	5	SM2320B-2011	1	07/06/2022 19:09	BXD	A
Total Dissolved Solids	412	S2	mg/L	25	S2540C-11	1	07/05/2022 07:27	SMS	A
Total Suspended Solids	6	S2	mg/L	5	S2540D-11	1	07/01/2022 14:30	JML	A

Results

Client Sample ID	**240-1-51 BM-4**	Collected	**06/30/2022 09:50**
Lab Sample ID	**3250730003**	Lab Receipt	**06/30/2022 10:05**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	ND	ND,1,S3	mg/L	5	SM2310B-2011	1	07/05/2022 12:53	KXH	A
Alkalinity, Total	111	2,S3	mg/L	5	SM2320B-2011	1	07/06/2022 19:18	BXD	A
Total Dissolved Solids	244	S3	mg/L	25	S2540C-11	1	07/05/2022 07:27	SMS	A
Total Suspended Solids	ND	ND,S3	mg/L	5	S2540D-11	1	07/01/2022 14:30	JML	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3250730001	240-1-51 NPDES 002	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3250730002	240-1-51 BM-5	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	
3250730003	240-1-51 BM-4	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3250730001	240-1-51 NPDES 002	N/A	N/A	N/A		S2540C-11	860648
		N/A	N/A	N/A		S2540D-11	860935
		N/A	N/A	N/A		SM2310B-2011	861696
		N/A	N/A	N/A		SM2320B-2011	862152
3250730002	240-1-51 BM-5	N/A	N/A	N/A		S2540C-11	860648
		N/A	N/A	N/A		S2540D-11	860935
		N/A	N/A	N/A		SM2310B-2011	861696
		N/A	N/A	N/A		SM2320B-2011	862152
3250730003	240-1-51 BM-4	N/A	N/A	N/A		S2540C-11	860648
		N/A	N/A	N/A		S2540D-11	860935
		N/A	N/A	N/A		SM2310B-2011	861696
		N/A	N/A	N/A		SM2320B-2011	862152

7/8/2022 8:13:13 PM

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P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #

ALS G

3250730

Logged By: MJE
PM: GJM

of

Client Name: Akens Engineering Associates, Inc.

Address: 219 East Main Street, Shiremanstown, PA 17011

Contact: Rick Caranfa

Phone#: 717-975-9933

Project Name/#: 240-1-51 Pierson Rheems

Bill To:

TAT [x] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: Approved?

Email? [x] -Y rick@akensengineering.com

Fax? [ ] -Y No.:

	Container Type	PL	PL
	Container Size	1 L	250 ml
	Perservative	None	None

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity	Alkalinity	Enter Number of Cor
1	240-1-51 NPDES 001			G	GW			
2	240-1-51 NPDES 002	6-30-22	0935	G	GW	1	1	
3	240-1-51 BM-5	6-30-22	0925	G	GW	1	1	
4	240-1-51 BM-4	6-30-22	0950	G	GW	1	1	
5	240-1-51 BM-3			G	GW		SHC	6/30/22
6	240-1-51 BM-7			G	GW			
7	Samples 1, 5, 6 not received COM 6/30							
8								
9								
10								

Temp Taken By: SHC
WO Temp (°C) 16°C
Therm ID: 570
Receipt Info Completed By: SHC

Cooler Custody Seal Intact	Y N	NA
Sample Custody Seal Intact	Y N	NA
Received on Ice	Y	N NA
Cooler & Samples Intact	Y	N
Correct Containers Provided	Y	N
Sample Label/COC Agree	Y	N
Adequate Sample Volumes	Y	N
VOA Headspace Present	Y N	NA
Voa Trip Blank	Y N	NA
NJ≤ 4 Days?	Y	N
Rad Screen (uCi)		
Courier/Tracking #:		
SDWA Compliance	Y	N
PWSID		
WV Containers 0-6°C	Y N	NA

Receipt Information (completed by Receiving Lab)

W.O. Temp: 16°C Therm ID: 570

Courier/Tracking #:

Purchase Order #:

Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments

1	pH 7.31 Temp 58.2°
2	No Discharge
3	pH 7.57 Temp 59.7°
4	pH 7.48 Temp 59.2°
5	pH Temp
6	pH Temp

Print Name: Charles Brown

Sampler Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	Charles Brown / Akens	6-30-22	10:05	2	SHC/ALS	6/30/22	1005
3				4			
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]

Special Processing: USACE [ ] Navy [ ]

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other

Reportable to PADEP? Yes [ ] No [ ]

PWSID #

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type-

* G=Grab; C=Composite

**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

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Rev 11/18

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

Akens Engineering Associates

Project 240-1-51 Pierson Rheems
Workorder 3253741
Report ID 185279 on 8/2/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 19, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3253741001	PW-1	Water	07/19/2022 15:05	07/19/2022 15:55	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3253741001	PW-1	**S1**	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Detected Results Summary

Client Sample ID	**PW-1**	Collected	**07/19/2022 15:05**
Lab Sample ID	**3253741001**	Lab Receipt	**07/19/2022 15:55**

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	16	mg/L	5	SM2310B-2011	#
Alkalinity, Total	210	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	394	mg/L	25	S2540C-11	#

Results

Client Sample ID	**PW-1**	Collected	**07/19/2022 15:05**
Lab Sample ID	**3253741001**	Lab Receipt	**07/19/2022 15:55**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	16	1,S1	mg/L	5	SM2310B-2011	1	07/22/2022 11:45	SMS	A
Alkalinity, Total	210	2,S1	mg/L	5	SM2320B-2011	1	07/29/2022 14:28	BXD	A
Total Dissolved Solids	394	S1	mg/L	25	S2540C-11	1	07/21/2022 09:58	SMS	A
Total Suspended Solids	ND	ND,S1	mg/L	5	S2540D-11	1	07/20/2022 11:15	JML	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3253741001	PW-1	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3253741001	PW-1	N/A	N/A	N/A		S2540C-11	865355
		N/A	N/A	N/A		S2540D-11	865722
		N/A	N/A	N/A		SM2310B-2011	866436
		N/A	N/A	N/A		SM2320B-2011	867673

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P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3253741 Logged By: MJE PM: GJM

ALS Qu

Client Name: Akens Engineering Associates, Inc.

Address: 219 East Main Street, Shiremanstown, PA 17011

Contact: Rick Caranfa

Phone#: 717-975-9933

Project Name/#: 240-1-51 Pierson Rheems Private Water Supply

Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: **Approved?**

Email? [X] -Y rick@akensengineering.com

Fax? [ ] -Y No.:

	Container Type	PL								
	Container Size	1 L								
	Perservative	None								

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity, Alkalinity	Enter Number of Conta								
1	PW-1	7/19/22	1505	G	GW	1									
2															
3															
4															
5															
6															
7															
8															
9															
10															

Temp Taken By: DD
WO Temp (°C): 19.0
Therm ID: 570
Receipt Info Completed By: DD
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N
Voa Trip Blank Y N
NJ≤ 4 Days?
Rad Screen (uCi) —
Courier/Tracking #: —
SDWA Compliance Y N
PWSID
WV Containers 0-6°C Y N

Receipt Information (completed by Receiving Lab)

W.O. Temp: 19° Therm ID: 570

Courier/Tracking #:

Purchase Order #:

Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments

pH 7.4 Temp 25.3 SWL —

Print Name: Charles Brown

Sampler Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	Charles Brown / Akens	7/19/22		2	Dane Dutchs ALS	7/19/22	15:55
3				4			
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]

Special Processing: USACE [ ] Navy [ ]

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other

Reportable to PADEP? Yes [ ] No [ ]

PWSID #

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type-

* G=Grab; C=Composite

**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

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8/2/2022 4:46 PM

9 of 9

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

Akens Engineering Associates

Project 240-1-51 Pierson Rheems
Workorder 3253742
Report ID 185281 on 8/2/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 19, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3253742001	PW-7	Water	07/19/2022 14:05	07/19/2022 15:55	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

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RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
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(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3253742001	PW-7	S1	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Detected Results Summary

Client Sample ID	**PW-7**	Collected	**07/19/2022 14:05**
Lab Sample ID	**3253742001**	Lab Receipt	**07/19/2022 15:55**

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	10	mg/L	5	SM2310B-2011	#
Alkalinity, Total	169	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	290	mg/L	25	S2540C-11	#
Total Suspended Solids	7	mg/L	5	S2540D-11	#

Results

Client Sample ID	**PW-7**	Collected	**07/19/2022 14:05**
Lab Sample ID	**3253742001**	Lab Receipt	**07/19/2022 15:55**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	10	1,S1	mg/L	5	SM2310B-2011	1	07/22/2022 11:45	SMS	A
Alkalinity, Total	169	2,S1	mg/L	5	SM2320B-2011	1	07/29/2022 14:37	BXD	A
Total Dissolved Solids	290	S1	mg/L	25	S2540C-11	1	07/21/2022 09:58	SMS	A
Total Suspended Solids	7	S1	mg/L	5	S2540D-11	1	07/20/2022 11:15	JML	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3253742001	PW-7	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3253742001	PW-7	N/A	N/A	N/A		S2540C-11	865355
		N/A	N/A	N/A		S2540D-11	865722
		N/A	N/A	N/A		SM2310B-2011	866436
		N/A	N/A	N/A		SM2320B-2011	867673

301 Fulling Mill Rd
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC # 3253742
ALS C
Logged By: MJE
PM: GJM
of

Client Name: Akens Engineering Associates, Inc.
Address: 219 East Main Street, Shiremanstown, PA 17011
Contact: Rick Caranfa
Phone#: 717-975-9933
Project Name/#: 240-1-51 Pierson Rheems Private Water Supply
Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.
Date Required: **Approved?**
Email? [X] -Y rick@akensengineering.com
Fax? [ ] -Y No.:

	Container Type	PL									
	Container Size	1 L									
	Perservative	None									

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity, Alkalinity	Enter Number of Conta
1	PW-7	7/19/22	1405	G	GW	1	
2							
3							
4							
5							
6							
7							
8							
9							
10							

Temp Taken By: DD
WO Temp (°C) 20°
Therm ID: 570
Receipt Info Completed By: DD
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N NA
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N NA
Voa Trip Blank Y N NA
NJ≤ 4 Days? N
Rad Screen (uCi) —
Courier/Tracking #: —
SDWA Compliance Y N
PWSID
WV Containers 0-6°C Y N NA

(completed by Receiving Lab)
W.O. Temp: 20 Therm ID: 570
Courier/Tracking #:
Purchase Order #:
Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments
pH 7.6 Temp 22.9 SWL 47.7

Print Name: charles Brown
Sampler Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Charles Brown / Akens	7/19/22		2 Dave Dutchy ALS	7/19/22	15:55
3			4		
5			6		
7			8		
9			10		

Data Deliverables [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]
Special Processing USACE [ ] Navy [ ]
State Samples Collected In [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other
Reportable to PADEP? Yes [ ] No [ ]
PWSID #
Sample Disposal Lab [ ] Special [ ]
EDDS: Format Type-

* G=Grab; C=Composite
**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, MIDDLETOWN, PA 17057

Rev 11/18

301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

Akens Engineering Associates

Project 240-1-51 Pierson Rheems
Workorder 3253743
Report ID 185277 on 8/2/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 19, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3253743001	PW-13	Water	07/19/2022 15:30	07/19/2022 15:55	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3253743001	PW-13	**S1**	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Detected Results Summary

Client Sample ID	**PW-13**	Collected	**07/19/2022 15:30**
Lab Sample ID	**3253743001**	Lab Receipt	**07/19/2022 15:55**

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	9	mg/L	5	SM2310B-2011	#
Alkalinity, Total	168	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	426	mg/L	25	S2540C-11	#

Results

Client Sample ID	**PW-13**	Collected	**07/19/2022 15:30**
Lab Sample ID	**3253743001**	Lab Receipt	**07/19/2022 15:55**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	9	1,S1	mg/L	5	SM2310B-2011	1	07/22/2022 11:45	SMS	A
Alkalinity, Total	168	2,S1	mg/L	5	SM2320B-2011	1	07/29/2022 14:48	BXD	A
Total Dissolved Solids	426	S1	mg/L	25	S2540C-11	1	07/21/2022 09:58	SMS	A
Total Suspended Solids	ND	ND,S1	mg/L	5	S2540D-11	1	07/20/2022 11:15	JML	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3253743001	PW-13	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3253743001	PW-13	N/A	N/A	N/A		S2540C-11	865355
		N/A	N/A	N/A		S2540D-11	865722
		N/A	N/A	N/A		SM2310B-2011	866436
		N/A	N/A	N/A		SM2320B-2011	867673

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Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC # 3253743
Logged By: MJE
PM: GJM
ALS Q
of

Client Name: Akens Engineering Associates, Inc.
Address: 219 East Main Street, Shiremanstown, PA 17011
Contact: Rick Caranfa
Phone#: 717-975-9933
Project Name/#: 240-1-51 Pierson Rheems Private Water Supply
Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? [X] -Y rick@akensengineering.com
Fax? [ ] -Y No.:

	Container Type	Container Size	Perservative
	PL	1 L	None

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity, Alkalinity	Enter Number of Containers
1	PW-13	7/19/22	1530	G	GW	1	
2							
3							
4							
5							
6							
7							
8							
9							
10							

Temp Taken By: DD
WO Temp (°C) 25°
Therm ID: 570
Receipt Info Completed By: DD
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N NA
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N NA
Voa Trip Blank Y N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi) —
Courier/Tracking #: —
SDWA Compliance Y N
PWSID
WV Containers 0-6°C Y N NA

(completed by Receiving Lab)
W.O. Temp: 25° Therm ID: 570
Courier/Tracking #:
Purchase Order #:
Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments
pH 7.4 Temp 21.0 SWL 29.6

Print Name: Charles Brown
Sampler Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Charles Brown / Akens	7/19/22		2 Dave Dutchas ALS	7/19/22	15:55
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]
Special Processing: USACE [ ] Navy [ ]
State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other
Reportable to PADEP? Yes [ ] No [ ]
PWSID #
Sample Disposal: Lab [ ] Special [ ]
EDDS: Format Type-

* G=Grab; C=Composite
**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, MIDDLETOWN, PA 17057

301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

Akens Engineering Associates

Project 240-1-51 Pierson Rheems
Workorder 3253744
Report ID 185280 on 8/2/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 19, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3253744001	PW-15	Water	07/19/2022 14:50	07/19/2022 15:55	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3253744001	PW-15	S1	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Detected Results Summary

Client Sample ID	**PW-15**	Collected	**07/19/2022 14:50**
Lab Sample ID	**3253744001**	Lab Receipt	**07/19/2022 15:55**

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	22	mg/L	5	SM2310B-2011	#
Alkalinity, Total	265	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	442	mg/L	25	S2540C-11	#

Results

Client Sample ID	**PW-15**	Collected	**07/19/2022 14:50**
Lab Sample ID	**3253744001**	Lab Receipt	**07/19/2022 15:55**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	22	1,S1	mg/L	5	SM2310B-2011	1	07/22/2022 11:45	SMS	A
Alkalinity, Total	265	2,S1	mg/L	5	SM2320B-2011	1	07/29/2022 15:00	BXD	A
Total Dissolved Solids	442	S1	mg/L	25	S2540C-11	1	07/21/2022 09:58	SMS	A
Total Suspended Solids	ND	ND,S1	mg/L	5	S2540D-11	1	07/20/2022 11:15	JML	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3253744001	PW-15	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3253744001	PW-15	N/A	N/A	N/A		S2540C-11	865355
		N/A	N/A	N/A		S2540D-11	865722
		N/A	N/A	N/A		SM2310B-2011	866436
		N/A	N/A	N/A		SM2320B-2011	867673

301 Fulling Mill Rd
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3253744
Logged By: MJE
PM: GJM
ALS Qu

Client Name: Akens Engineering Associates, Inc.

Address: 219 East Main Street, Shiremanstown, PA 17011

Contact: Rick Caranfa

Phone#: 717-975-9933

Project Name/#: 240-1-51 Pierson Rheems Private Water Supply

Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: Approved?

Email? [X] -Y rick@akensengineering.com

Fax? [ ] -Y No.:

	Container Type	Container Size	Perservative
	PL	1 L	None

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	Enter Number of (TDS, TSS, Acidity, Alkalinity
1	PW-15	7/19/22	1450	G	GW	1
2						
3						
4						
5						
6						
7						
8						
9						
10						

elow.

Temp Taken By: DD
WO Temp (°C): 19°
Therm ID: 570
Receipt Info Completed By: DD

Cooler Custody Seal Intact	Y N	NA
Sample Custody Seal Intact	Y N	NA
Received on Ice	Y N	
Cooler & Samples Intact	Y N	
Correct Containers Provided	Y N	
Sample Label/COC Agree	Y N	
Adequate Sample Volumes	Y N	
VOA Headspace Present	Y N	NA
Voa Trip Blank	Y N	NA
NJ≤ 4 Days?		Y N
Rad Screen (uCi)	—	
Courier/Tracking #:	—	
SDWA Compliance	Y N	
PWSID		
WV Containers 0-6°C	Y N	NA

(completed by Receiving Lab)

W.O. Temp: 19° Therm ID: 570

Courier/Tracking #:

Purchase Order #:

Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments

pH 7.2 Temp 26.1 SWL —

Print Name: Charles Brown

Sampler Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	Charles Brown / Akens	7/19/22		2	Dave Dutchas ALS	7/19/22	15:55
3				4			
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]

Special Processing: USACE [ ] Navy [ ] [ ]

State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other

Reportable to PADEP? Yes [ ] No [ ]

PWSID #

Sample Disposal: Lab [ ] Special [ ]

EDDS: Format Type-

* G=Grab; C=Composite

**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, MIDDLETOWN, PA 17057

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

Akens Engineering Associates

Project 240-1-51 Pierson Rheems
Workorder 3253745
Report ID 185276 on 8/2/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 19, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3253745001	PW-19	Water	07/19/2022 14:35	07/19/2022 15:55	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3253745001	PW-19	S1	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Detected Results Summary

Client Sample ID	**PW-19**	Collected	**07/19/2022 14:35**
Lab Sample ID	**3253745001**	Lab Receipt	**07/19/2022 15:55**

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	18	mg/L	5	SM2310B-2011	#
Alkalinity, Total	226	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	366	mg/L	25	S2540C-11	#

Results

Client Sample ID	**PW-19**	Collected	**07/19/2022 14:35**
Lab Sample ID	**3253745001**	Lab Receipt	**07/19/2022 15:55**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	18	1,S1	mg/L	5	SM2310B-2011	1	07/22/2022 11:45	SMS	A
Alkalinity, Total	226	2,S1	mg/L	5	SM2320B-2011	1	07/29/2022 15:12	BXD	A
Total Dissolved Solids	366	S1	mg/L	25	S2540C-11	1	07/21/2022 09:58	SMS	A
Total Suspended Solids	ND	ND,S1	mg/L	5	S2540D-11	1	07/20/2022 11:15	JML	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3253745001	PW-19	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3253745001	PW-19	N/A	N/A	N/A		S2540C-11	865355
		N/A	N/A	N/A		S2540D-11	865722
		N/A	N/A	N/A		SM2310B-2011	866436
		N/A	N/A	N/A		SM2320B-2011	867673

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P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC # 3253745
Logged By: MJE
PM: GJM
ALS C
of

Client Name: Akens Engineering Associates, Inc.
Address: 219 East Main Street, Shiremanstown, PA 17011
Contact: Rick Caranfa
Phone#: 717-975-9933
Project Name/#: 240-1-51 Pierson Rheems Private Water Supply
Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.
Date Required: **Approved?**
Email? [X] -Y rick@akensengineering.com
Fax? [ ] -Y No.:

	Container Type	PL									
	Container Size	1 L									
	Perservative	None									

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity, Alkalinity									
						Enter Number c								Below.	
1	PW-19	7/19/22	1435	G	GW	1									
2															
3															
4															
5															
6															
7															
8															
9															
10															

Temp Taken By: DD
WO Temp (°C) 18°
Therm ID: 570
Receipt Info Completed By: DD
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N NA
Voa Trip Blank Y N
NJ≤ 4 Days?
Rad Screen (uCi)
Courier/Tracking #:
SDWA Compliance Y N
PWSID
WV Containers 0-6°C Y N NA

(completed by Receiving Lab)
W.O. Temp: 18° Therm ID: 570
Courier/Tracking #:
Purchase Order #:
Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments
pH 7.1 Temp 24.6 SWL 47.6

Print Name: Charles Brown
Sampler Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Charles Brown AKENS	7/19/22		2 Dave Dutchess ALS	7/19/22	15:55
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]
Special Processing: USACE [ ] Navy [ ]
State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ] other
Reportable to PADEP? Yes [ ] No [ ]
PWSID #
Sample Disposal: Lab [ ] Special [ ]
EDDS: Format Type-

* G=Grab; C=Composite
**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, MIDDLETOWN, PA 17057

Rev 11/18

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

Akens Engineering Associates

Project 240-1-51 Pierson Rheems
Workorder 3257893
Report ID 188715 on 8/22/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Aug 11, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3257893001	A01	Water	08/11/2022 13:15	08/11/2022 14:22	CB	Akens Engineering Associates

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

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U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3257893001	A01	**S1**	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Detected Results Summary

Client Sample ID	**A01**	Collected	**08/11/2022 13:15**
Lab Sample ID	**3257893001**	Lab Receipt	**08/11/2022 14:22**

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	38	mg/L	5	SM2310B-2011	#
Alkalinity, Total	206	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	298	mg/L	25	S2540C-11	#

Results

Client Sample ID	**A01**	Collected	**08/11/2022 13:15**
Lab Sample ID	**3257893001**	Lab Receipt	**08/11/2022 14:22**

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	38	1,S1	mg/L	5	SM2310B-2011	1	08/15/2022 12:31	SMS	A
Alkalinity, Total	206	2,S1	mg/L	5	SM2320B-2011	1	08/19/2022 13:17	BXD	A
Total Dissolved Solids	298	S1	mg/L	25	S2540C-11	1	08/16/2022 09:06	SMS	A
Total Suspended Solids	ND	ND,S1	mg/L	5	S2540D-11	1	08/15/2022 10:04	JML	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3257893001	A01	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3257893001	A01	N/A	N/A	N/A		S2540C-11	871071
		N/A	N/A	N/A		S2540D-11	870751
		N/A	N/A	N/A		SM2310B-2011	871068
		N/A	N/A	N/A		SM2320B-2011	872085

8/22/2022 11:49 AM

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Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

3257893

Logged By: SLS
PM: GJM

13 of

Client Name: Akens Engineering Associates, Inc.

Address: 219 East Main Street, Shiremanstown, PA 17011

Contact: Rick Caranfa

Phone#: 717-975-9933

Project Name/#: 240-1-51 Pierson Rheems Private Water Supply

Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: **Approved?**

Email? [X] -Y rick@akensengineering.com

Fax? [ ] -Y No.:

	Container Type	PL									
	Container Size	1 L									
	Perservative	None									

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity, Alkalinity										
						Enter Number of Conta										
1	AO1	8/4/22	115	G	GW	1										
2																
3																
4																
5																
6																
7																
8																
9																
10																

Temp Taken By: SHC
WO Temp (°C) 23°C
Therm ID: 570
Receipt Info Completed By: SHC
Cooler Custody Seal Intact Y N
Sample Custody Seal Intact Y N
Received on Ice Y N NA
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N
Voa Trip Blank Y N
NI≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:

SDWA Compliance Y
PWSID
WV Containers 0-6°C Y N

Receipt Information (completed by Receiving Lab)

W.O. Temp: 23°C Therm ID: 570

Courier/Tracking #:

Purchase Order #:

Project Comments:

ALS Field Services: □ Pickup □ Labor
□ Composite Sampling □ Rental Equipment
Other:

Sample/COC Comments

pH 6.9 Temp 22.8 SWL 20.18

Print Name: Charles Brown

Sampler Comments:

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	Charles Brown / Akens	8/4/22	2222	2	SHC / ALS	8/4/22	1422
3				4			
5				6			
7				8			
9				10			

Data Deliverables
[ ] Standard
[ ] CLP-like
[ ] USACE/DOD
[ ]

Special Processing
USACE [ ]
Navy [ ]
[ ]

State Samples Collected In
[ ] NY
[ ] NJ
[ ] PA
[ ] NC
[ ]
other

Reportable to PADEP? Yes [ ] No [ ]
PWSID #

Sample Disposal
Lab [ ]
Special [ ]

EDDS: Format Type-

* G=Grab; C=Composite

**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

Akens Engineering Associates

Project 240-1-51 Pierson Rheems
Workorder 3257894
Report ID 188720 on 8/22/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Aug 11, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact George Methlie (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Rick Caranfa - Akens Engineering Associates

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

George Methlie

George Methlie *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3257894001	A03	Water	08/11/2022 13:40	08/11/2022 14:22	CB	Akens Engineering Associates

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
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- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
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- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
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- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

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N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3257894001	A03	**S1**	Sample temperature upon receipt at lab was greater than 6 ºC.

Result Notations

Notation Ref.	
1	The Total Acidity is titrated to a pH of 8.3 and reported as mg CaCO3/L.
2	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Detected Results Summary

Client Sample ID	A03	Collected	08/11/2022 13:40
Lab Sample ID	3257894001	Lab Receipt	08/11/2022 14:22

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Acidity, Total	16	mg/L	5	SM2310B-2011	#
Alkalinity, Total	205	mg/L	5	SM2320B-2011	#
Total Dissolved Solids	458	mg/L	25	S2540C-11	#

Results

Client Sample ID	A03	Collected	08/11/2022 13:40
Lab Sample ID	3257894001	Lab Receipt	08/11/2022 14:22

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acidity, Total	16	1,S1	mg/L	5	SM2310B-2011	1	08/15/2022 12:31	SMS	A
Alkalinity, Total	205	2,S1	mg/L	5	SM2320B-2011	1	08/19/2022 13:29	BXD	A
Total Dissolved Solids	458	S1	mg/L	25	S2540C-11	1	08/16/2022 09:06	SMS	A
Total Suspended Solids	ND	ND,S1	mg/L	5	S2540D-11	1	08/15/2022 10:04	JML	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3257894001	A03	S2540C-11	N/A	
		S2540D-11	N/A	
		SM2310B-2011	N/A	
		SM2320B-2011	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3257894001	A03	N/A	N/A	N/A		S2540C-11	871071
		N/A	N/A	N/A		S2540D-11	870751
		N/A	N/A	N/A		SM2310B-2011	871068
		N/A	N/A	N/A		SM2320B-2011	872085

8/22/2022 11:59 AM

301 Fulling Mill Rd
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

3257894
Logged By: SLS
PM: GJM

94 of

Client Name: Akens Engineering Associates, Inc.
Address: 219 East Main Street, Shiremanstown, PA 17011
Contact: Rick Caranfa
Phone#: 717-975-9933
Project Name/#: 240-1-51 Pierson Rheems Private Water Supply
Bill To:

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? [X] -Y rick@akensengineering.com
Fax? [ ] -Y No.:

	Container Type	Container Size	Perservative
	PL	1 L	None

ANALYSES/METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	TDS, TSS, Acidity, Alkalinity
1	AO3	8/11/22	140	G	GW	1
2						
3						
4						
5						
6						
7						
8						
9						
10						

Enter Number of C ... elow.

Temp Taken By: SHC
WO Temp (°C) 21°C
Therm ID: 570
Receipt Info Completed By: SHC
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N NA
Voa Trip Blank Y N
NJ≤ 4 Days? Y N
Rad Screen (uCi)
Courier/Tracking #:
SDWA Compliance Y N
PWSID
WV Containers 0-6°C Y N

Information (completed by Receiving Lab)
W.O. Temp: 21°C Therm ID: 570
Courier/Tracking #:
Purchase Order #:
Project Comments:

ALS Field Services: ☐ Pickup ☐ Labor
☐ Composite Sampling ☐ Rental Equipment
Other:

Sample/COC Comments
pH 7.2 Temp 23.2 SWL 50.4

Print Name: Charles Brown
Sampler Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Charles Brown / Akens	8/11/22	222	2 CHC/ALS	8/11/22	1422
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE/DOD [ ]
Special Processing: USACE [ ] Navy [ ]
State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ]
Reportable to PADEP? Yes [ ] No [ ]
PWSID #
Sample Disposal: Lab [ ] Special [ ]
EDDS: Format Type-

* G=Grab; C=Composite
**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, MIDDLETOWN, PA 17057

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