



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised  
03/23/2022

DEP USE ONLY

Date Received

**FORM 19**  
**MUNICIPAL WASTE LANDFILL**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284  
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP007W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 24.53 " Longitude: 76 ° 26 ' 33.28 "

Depth to Water Level: 6.37 ft Measured from:  Land Surface  TOC

Casing Stickup: 1.50 ft Elevation of Water Level: 447.03 ft./MSL

Sampling Depth: 33 ft Volume of Water Column: 44.25 gal

Total Well Depth: 36.5 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: 2.4

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 1/18/2022 Sample Collection Time: 10:50

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3222895001 Final Lab Analysis Completion Date: 2/4/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP007W

Sample Date 1/18/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	12	SM18-2321
CALCIUM, TOTAL	19.3	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	84	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	67 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	10.1	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	7.3	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	10 E	EPA 300.0
pH-FIELD (SU)	4.93	FIELD
pH-LAB (SU)	5.89	EPA 150.1
POTASSIUM, TOTAL	2.4	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	34.3	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	566	FIELD
SPEC. COND., LAB (umhos/cm)	446	EPA 120.1
SULFATE	16.2	EPA 300.0
ALKALINITY	12	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	272	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.21	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP007W

Sample Date 1/18/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



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**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D<sup>o</sup> MM' SS.S")

Monitoring Point Number: CWMP001W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 27.43 " Longitude: 76 ° 26 ' 14.4 "

Depth to Water Level: 28.46 ft Measured from:  Land Surface  TOC

Casing Stickup: 1.23 ft Elevation of Water Level: 486.67 ft./MSL

Sampling Depth: 57 ft Volume of Water Column: 55.57 gal

Total Well Depth: 66.3 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: 1.7

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 1/18/2022 Sample Collection Time: 12:09

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3222895002 Final Lab Analysis CompletionDate: 2/4/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP001W

Sample Date 1/18/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	5 ND	SM18-2321
CALCIUM, TOTAL	14.9	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	46.3	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	320	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	10.4	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	50	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	17.3	EPA 300.0
pH-FIELD (SU)	5.28	FIELD
pH-LAB (SU)	5.82	EPA 150.1
POTASSIUM, TOTAL	2.3	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	13	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	382	FIELD
SPEC. COND., LAB (umhos/cm)	279	EPA 120.1
SULFATE	3.8	EPA 300.0
ALKALINITY	5 ND	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	210	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	15.3	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP001W

Sample Date 1/18/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



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General Reference: Section 273.284  
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**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP005W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 11.17 " Longitude: 76 ° 26 ' 7.08 "

Depth to Water Level: 43.94 ft Measured from:  Land Surface  TOC

Casing Stickup: -0.37 ft Elevation of Water Level: 469.49 ft./MSL

Sampling Depth: 130 ft Volume of Water Column: 141.08 gal

Total Well Depth: 140 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: 1.5

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 1/18/2022 Sample Collection Time: 13:36

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3222895003 Final Lab Analysis Completion Date: 2/4/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP005W

Sample Date 1/18/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	15	SM18-2321
CALCIUM, TOTAL	13.8	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	59.8	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	150	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	7.3	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	51	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	7.7	EPA 300.0
pH-FIELD (SU)	5.08	FIELD
pH-LAB (SU)	6.24	EPA 150.1
POTASSIUM, TOTAL	2	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	30.2	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	466	FIELD
SPEC. COND., LAB (umhos/cm)	335	EPA 120.1
SULFATE	5.8	EPA 300.0
ALKALINITY	15	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	226	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	5.57	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.



I.D. No 100008

Monitoring Point No. CWMP005W

Sample Date 1/18/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



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**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP016W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County Municipality: Manor Township

Sampling Point: Latitude: 39 ° 56 ' 55.57 " Longitude: 76 ° 26 ' 50.59 "

Depth to Water Level: 10.26 ft Measured from:  Land Surface  TOC

Casing Stickup: 2.53 ft Elevation of Water Level: 301.71 ft./MSL

Sampling Depth: 71 ft Volume of Water Column: \_\_\_\_\_ gal

Total Well Depth: 78.03 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: 2.2

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate: \_\_\_\_\_ gpm

Sample Date (mm/dd/yy): 1/20/2022 Sample Collection Time: 10:55

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3223372001 Final Lab Analysis Completion Date: 2/5/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 1/20/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.131	EPA 350.3
BICARBONATE	8	SM18-2321
CALCIUM, TOTAL	5.5	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	4.7	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	400	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	1.4	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	8.7	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	2.6	EPA 300.0
pH-FIELD (SU)	5.1	FIELD
pH-LAB (SU)	6.32	EPA 150.1
POTASSIUM, TOTAL	0.53	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	3.3	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	94	FIELD
SPEC. COND., LAB (umhos/cm)	80	EPA 120.1
SULFATE	9.4	EPA 300.0
ALKALINITY	8	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	59	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	4.17	SM 2130B

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I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 1/20/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



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Monitoring Point Number: CWMP009W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 10.82 " Longitude: 76 ° 26 ' 55.8 "

Depth to Water Level: 8.7 ft Measured from:  Land Surface  TOC

Casing Stickup: 2.70 ft Elevation of Water Level: 395.5 ft./MSL

Sampling Depth: 16 ft Volume of Water Column: 7.18 gal

Total Well Depth: 19.7 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: 2.6

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 1/20/2022 Sample Collection Time: 11:46

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3223372002 Final Lab Analysis Completion Date: 2/13/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP009W

Sample Date 1/20/2022

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**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	27.5	EPA 350.3
BICARBONATE	555	SM18-2321
CALCIUM, TOTAL	150	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	119	EPA 410.4
CHLORIDE	601	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	36500	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	81.1	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	12200	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	1 ND	EPA 300.0
pH-FIELD (SU)	6.14	FIELD
pH-LAB (SU)	6.7	EPA 150.1
POTASSIUM, TOTAL	33	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	183	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	4040	FIELD
SPEC. COND., LAB (umhos/cm)	3030	EPA 120.1
SULFATE	6.3	EPA 300.0
ALKALINITY	555	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1580	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	35.2	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	28.1	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP009W

Sample Date 1/20/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	2.2	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1.4	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised  
03/23/2022

DEP USE ONLY

Date Received

**FORM 19**  
**MUNICIPAL WASTE LANDFILL**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284  
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP008W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 16.97 " Longitude: 76 ° 26 ' 47.58 "

Depth to Water Level: 2.4 ft Measured from:  Land Surface  TOC

Casing Stickup: 2.80 ft Elevation of Water Level: 419.9 ft./MSL

Sampling Depth: 19 ft Volume of Water Column: 3.33 gal

Total Well Depth: 22.8 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: 5.1

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 1/20/2022 Sample Collection Time: 12:31

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3223372003 Final Lab Analysis CompletionDate: 2/5/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_



I.D. No 100008

Monitoring Point No. CWMP008W

Sample Date 1/20/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	5.24	EPA 350.3
BICARBONATE	351	SM18-2321
CALCIUM, TOTAL	57.4	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	27	EPA 410.4
CHLORIDE	32.9	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	24100	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	27.9	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	14600	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	1 ND	EPA 300.0
pH-FIELD (SU)	6.19	FIELD
pH-LAB (SU)	6.76	EPA 150.1
POTASSIUM, TOTAL	7.6	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	33.4	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1102	FIELD
SPEC. COND., LAB (umhos/cm)	859	EPA 120.1
SULFATE	7.2	EPA 300.0
ALKALINITY	351	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	434	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	6.5	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	8.55	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP008W

Sample Date 1/20/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	2.4	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised  
03/23/2022

DEP USE ONLY

Date Received

**FORM 19**  
**MUNICIPAL WASTE LANDFILL**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284  
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP010W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 2.38 " Longitude: 76 ° 26 ' 57.92 "

Depth to Water Level: 8.49 ft Measured from:  Land Surface  TOC

Casing Stickup: 2.10 ft Elevation of Water Level: 352.41 ft./MSL

Sampling Depth: 17 ft Volume of Water Column: 7.25 gal

Total Well Depth: 19.6 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: 1.2

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 1/20/2022 Sample Collection Time: 13:21

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3223372004 Final Lab Analysis CompletionDate: 2/13/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP010W

Sample Date 1/20/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****ANALYTES****1-Q. Inorganics (Enter all data in mg/l except as noted)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
AMMONIA-NITROGEN	0.117	EPA 350.3
BICARBONATE	178	SM18-2321
CALCIUM, TOTAL	37.5	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	20	EPA 410.4
CHLORIDE	203	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	2300	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	36.8	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	370	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	17.7 E	EPA 300.0
pH-FIELD (SU)	6.74	FIELD
pH-LAB (SU)	7.43	EPA 150.1
POTASSIUM, TOTAL	9.2	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	144	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1880	FIELD
SPEC. COND., LAB (umhos/cm)	1380	EPA 120.1
SULFATE	26.6	EPA 300.0
ALKALINITY	178	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	658	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	4.2	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	12.2	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).

Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP010W

Sample Date 1/20/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised 03/23/2022
<b>DEP USE ONLY</b>
Date Received

**FORM 19**  
**MUNICIPAL WASTE LANDFILL**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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General Reference: Section 273.284  
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana  
Site Name: Creswell Landfill  
Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP002W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 19.97 " Longitude: 76 ° 26 ' 12.3 "

Depth to Water Level: 63.21 ft Measured from:  Land Surface  TOC

Casing Stickup: -1.19 ft Elevation of Water Level: 462.60 ft./MSL

Sampling Depth: 85 ft Volume of Water Column: 54.03 gal

Total Well Depth: 100 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: \_\_\_\_\_

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 1/21/2022 Sample Collection Time: 11:21

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3223592001 Final Lab Analysis CompletionDate: 2/10/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP002W

Sample Date 1/21/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	52	SM18-2321
CALCIUM, TOTAL	35.4	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	72.8	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	67 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	12.4	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	620	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	5.5	EPA 300.0
pH-FIELD (SU)	5.54	FIELD
pH-LAB (SU)	6.87	EPA 150.1
POTASSIUM, TOTAL	2.7	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	23.4	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	573	FIELD
SPEC. COND., LAB (umhos/cm)	462	EPA 120.1
SULFATE	12.8	EPA 300.0
ALKALINITY	52	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	272	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1.9	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.21	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP002W

Sample Date 1/21/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	6	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.





COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised  
03/23/2022

DEP USE ONLY

Date Received

**FORM 19**  
**MUNICIPAL WASTE LANDFILL**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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General Reference: Section 273.284  
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D<sup>o</sup> MM' SS.S")

Monitoring Point Number: CWMP004W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 17.9 " Longitude: 76 ° 26 ' 7.05 "

Depth to Water Level: 99.06 ft Measured from:  Land Surface  TOC

Casing Stickup: -1.37 ft Elevation of Water Level: 430.47 ft./MSL

Sampling Depth: 130 ft Volume of Water Column: 60.13 gal

Total Well Depth: 140 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: \_\_\_\_\_

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate: \_\_\_\_\_ gpm

Sample Date (mm/dd/yy): 1/21/2022 Sample Collection Time: 11:52

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3223592002 Final Lab Analysis CompletionDate: 2/10/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP004W

Sample Date 1/21/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	26	SM18-2321
CALCIUM, TOTAL	21.3	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	47.4	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	67 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	7.5	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	8	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	5.7	EPA 300.0
pH-FIELD (SU)	5.38	FIELD
pH-LAB (SU)	6.82	EPA 150.1
POTASSIUM, TOTAL	1.4	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	16.9	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	379	FIELD
SPEC. COND., LAB (umhos/cm)	290	EPA 120.1
SULFATE	6.7	EPA 300.0
ALKALINITY	26	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	196	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.61	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.16	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP004W

Sample Date 1/21/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised  
03/23/2022

DEP USE ONLY

Date Received

**FORM 19**  
**MUNICIPAL WASTE LANDFILL**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284  
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D<sup>o</sup> MM' SS.S")

Monitoring Point Number: CWMP003W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 20.17 " Longitude: 76 ° 26 ' 8.37 "

Depth to Water Level: 64.29 ft Measured from:  Land Surface  TOC

Casing Stickup: -1.29 ft Elevation of Water Level: 459.92 ft./MSL

Sampling Depth: 100 ft Volume of Water Column: 15.73 gal

Total Well Depth: 75 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: \_\_\_\_\_

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate: \_\_\_\_\_ gpm

Sample Date (mm/dd/yy): 1/21/2022 Sample Collection Time: 12:05

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3223592003 Final Lab Analysis CompletionDate: 2/10/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP003W

Sample Date 1/21/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.176	EPA 350.3
BICARBONATE	19	SM18-2321
CALCIUM, TOTAL	22.9	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	63.2	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	67 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	8.5	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	6.4	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	6.9	EPA 300.0
pH-FIELD (SU)	5.07	FIELD
pH-LAB (SU)	6.71	EPA 150.1
POTASSIUM, TOTAL	1.6	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	20.6	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	442	FIELD
SPEC. COND., LAB (umhos/cm)	346	EPA 120.1
SULFATE	6	EPA 300.0
ALKALINITY	19	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	226	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.59	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.75	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP003W

Sample Date 1/21/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1.9	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

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**FORM 19**  
**MUNICIPAL WASTE LANDFILL**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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General Reference: Section 273.284  
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP018S  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor

Sampling Point: Latitude: 39 ° 56 ' 55.11 " Longitude: 76 ° 26 ' 51.66 "

Depth to Water Level: \_\_\_\_\_ ft Measured from:  Land Surface  TOC

Casing Stickup: \_\_\_\_\_ ft Elevation of Water Level: #Error ft./MSL

Sampling Depth: 0 ft Volume of Water Column: #Error gal

Total Well Depth: \_\_\_\_\_ ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: \_\_\_\_\_

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate: \_\_\_\_\_ gpm

Sample Date (mm/dd/yy): 1/21/2022 Sample Collection Time: 12:55

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3223592004 Final Lab Analysis CompletionDate: 2/10/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP018S

Sample Date 1/21/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.144	EPA 350.3
BICARBONATE	231	SM18-2321
CALCIUM, TOTAL	80.1	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	24	EPA 410.4
CHLORIDE	402	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	270	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	57.9	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	200	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	13.4 E	EPA 300.0
pH-FIELD (SU)	7.73	FIELD
pH-LAB (SU)	8.44	EPA 150.1
POTASSIUM, TOTAL	18.7	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	221	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	2583	FIELD
SPEC. COND., LAB (umhos/cm)	1950	EPA 120.1
SULFATE	30	EPA 300.0
ALKALINITY	244	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1040	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	7.4	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	1.89	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.



I.D. No 100008

Monitoring Point No. CWMP018S

Sample Date 1/21/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT



Date Prepared/Revised  
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Date Received

**FORM 19**  
**MUNICIPAL WASTE LANDFILL**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP017S  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 20.41 " Longitude: 76 ° 26 ' 45.1 "

Depth to Water Level: \_\_\_\_\_ ft Measured from:  Land Surface  TOC

Casing Stickup: \_\_\_\_\_ ft Elevation of Water Level: #Error ft./MSL

Sampling Depth: 0 ft Volume of Water Column: #Error gal

Total Well Depth: \_\_\_\_\_ ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: \_\_\_\_\_

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate: \_\_\_\_\_ gpm

Sample Date (mm/dd/yy): 1/21/2022 Sample Collection Time: 13:10

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3223592005 Final Lab Analysis CompletionDate: 2/10/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP017S

Sample Date 1/21/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	332	SM18-2321
CALCIUM, TOTAL	60.5	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	461	EPA 300.0
FLUORIDE	2 ND	EPA 300.0
IRON, TOTAL (ug/l)	950	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	77.6	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	84	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	15.2	EPA 300.0
pH-FIELD (SU)	7.5	FIELD
pH-LAB (SU)	8.22	EPA 150.1
POTASSIUM, TOTAL	11.9	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	275	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	3166	FIELD
SPEC. COND., LAB (umhos/cm)	2500	EPA 120.1
SULFATE	30.2	EPA 300.0
ALKALINITY	332	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1210	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	4	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	5.84	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP017S

Sample Date 1/21/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised  
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Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP012W  Well  Spring  Stream  Other  
 Upgradient/Upstream  Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 1.48 " Longitude: 76 ° 26 ' 36.02 "

Depth to Water Level: 64.61 ft Measured from:  Land Surface  TOC

Casing Stickup: 1.90 ft Elevation of Water Level: 318.09 ft./MSL

Sampling Depth: 0 ft Volume of Water Column: 54.77 gal

Total Well Depth: 101.9 ft Sampling Method:  Pumped  Bailed  Grab

Well Purged:  Yes  No Well Volumes Purged: \_\_\_\_\_

Sample Field Filtered (must be 0.45 micron)?:  Yes  No

Spring Flow Rate: \_\_\_\_\_ gpm

Sample Date (mm/dd/yy): 1/21/2022 Sample Collection Time: 14:05

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?:  Yes  No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3223592006 Final Lab Analysis CompletionDate: 2/10/2022

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: \_\_\_\_\_

I.D. No 100008

Monitoring Point No. CWMP012W

Sample Date 1/21/2022

**FORM 19**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**  
**ANALYTES**

**1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	74	SM18-2321
CALCIUM, TOTAL	32.8	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	145	EPA 300.0
FLUORIDE	10 ND	EPA 300.0
IRON, TOTAL (ug/l)	33100	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	9.4	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	290	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	50 ND	EPA 300.0
pH-FIELD (SU)	6.25	FIELD
pH-LAB (SU)	7.19	EPA 150.1
POTASSIUM, TOTAL	1.5	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	14.2	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	474	FIELD
SPEC. COND., LAB (umhos/cm)	337	EPA 120.1
SULFATE	100 ND	EPA 300.0
ALKALINITY	74	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	224	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1.2	SM18-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	302	SM 2130B

\* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

\*\* Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).  
Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP012W

Sample Date 1/21/2022

**FORM 19****QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | [www.alsglobal.com](http://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 **Lancaster County Solid Waste Authority**  
Project 1st QTR 2022 GWMP-FORM 19Q  
Workorder 3223592  
Report ID 149676 on 2/15/2022

## Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jan 21, 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 Susan Scherer (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](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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Daniel Brown - Lancaster County Solid Waste Authority  
Jordan Gallagher - Lancaster County Solid Waste Authority  
Jeff Musser - Lancaster County Solid Waste

*Susan Scherer*

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

**Susan Scherer**  
Project Coordinator

(ALS Digital Signature)





### Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3223592001	CWMP002W	Ground Water	01/21/2022 11:21 AM	01/21/2022 5:02 PM	BGS	Analytical Laboratory Service
3223592002	CWMP004W	Ground Water	01/21/2022 11:52 AM	01/21/2022 5:02 PM	BGS	Analytical Laboratory Service
3223592003	CWMP003W	Ground Water	01/21/2022 12:05 PM	01/21/2022 5:02 PM	BGS	Analytical Laboratory Service
3223592004	CWMP018S	Ground Water	01/21/2022 12:55 PM	01/21/2022 5:02 PM	BGS	Analytical Laboratory Service
3223592005	CWMP017S	Ground Water	01/21/2022 1:10 PM	01/21/2022 5:02 PM	BGS	Analytical Laboratory Service
3223592006	CWMP012W	Ground Water	01/21/2022 2:05 PM	01/21/2022 5:02 PM	BGS	Analytical Laboratory Service
3223592007	Trip Blank	Ground Water	01/21/2022 5:02 PM	01/21/2022 5:02 PM	BGS	Analytical Laboratory Service
3223592008	Field Blank	Water	01/21/2022 2:49 PM	01/21/2022 5:02 PM	BGS	Analytical Laboratory Service

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## Reference

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### 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 performed 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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### 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

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**Project Notations**

**Sample Notations**

**Lab ID**      **Sample ID**

**Result Notations**

Notation #	
0	Result reported exceeds instrument calibration
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	The QC sample type MB for method EPA 300.0 was outside the control limits for the analyte Chloride. The concentration was reported at 1.20mg/L and the control limit is less than 0.44mg/L.
3	The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.
4	The QC sample type MB for method EPA 300.0 was outside the control limits for the analyte Chloride. The concentration was reported at 1.19mg/L and the control limit is less than 0.44mg/L.



Client Sample ID **CWMP002W**  
 Lab Sample ID **3223592001**

Collected **01/21/2022 11:21 AM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A      Container 3223592001-H(Hydrochloric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 8260B      Fraction VOA\_Trace  
Batch 815611      Dilution 1  
Date 01/27/2022 5:29 AM      Analyst PDK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	6.0	ug/L	1.0	C
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	91.30 %	62 - 133	
4-Bromofluorobenzene	460-00-4	105 %	79 - 114	
Dibromofluoromethane	1868-53-7	92.80 %	78 - 116	
Toluene-d8	2037-26-5	94.20 %	76 - 127	

**Metals Analytical**  
**SW846 6010C**

**Prep**

Method SW846 3015      Container 3223592001-J1(Nitric Acid)  
Batch 815246      Aliquot 45 mL  
Date 01/25/2022 8:23 PM      Tech. SXC

**Analysis**

Method SW846 6010C      Fraction ICP\_AES  
Batch 815479      Dilution 1  
Date 01/26/2022 1:57 PM      Analyst SRT

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	35.4	mg/L	0.11	C
Iron, Total	7439-89-6	ND	mg/L	0.067	C,ND
Magnesium, Total	7439-95-4	12.4	mg/L	0.11	C
Manganese, Total	7439-96-5	0.62	mg/L	0.0056	C



Client Sample ID **CWMP002W**  
 Lab Sample ID **3223592001**

Collected **01/21/2022 11:21 AM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	2.7	mg/L	0.56	C
Sodium, Total	7440-23-5	23.4	mg/L	0.56	C

**Wet Chemistry (General)  
 S2540C-11**

**Prep**

Method N/A Container 3223592001-B(Unpreserved)  
 Batch N/A Aliquot  
 Date N/A Tech. N/A

**Analysis**

Method S2540C-11 Fraction  
 Batch 815196 Dilution 1  
 Date 01/28/2022 7:51 AM Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	272	mg/L	25	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

Method N/A Container 3223592001-B(Unpreserved)  
 Batch N/A Aliquot 5 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 300.0 Fraction  
 Batch 815951 Dilution 2  
 Date 01/22/2022 4:58 PM Analyst GJB

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	72.8	mg/L	2.0	C,2
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	5.5	mg/L	1.0	C
Sulfate	SO4	12.8	mg/L	2.0	C

**Wet Chemistry (General)  
 EPA 410.4**

**Prep**

Method N/A Container 3223592001-A(Sulfuric Acid)  
 Batch N/A Aliquot 2 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 410.4 Fraction  
 Batch 818826 Dilution 1  
 Date 02/10/2022 12:56 PM Analyst ALK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	ND	mg/L	15	C,ND



Client Sample ID **CWMP002W**  
 Lab Sample ID **3223592001**

Collected **01/21/2022 11:21 AM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Wet Chemistry (General)**  
**SW846 9050A**

**Prep**

Method N/A      Container 3223592001-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 9050A      Fraction  
Batch 815197      Dilution 1  
Date 01/25/2022 3:55 PM      Analyst JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	462	umhos/cm	1	c

**Wet Chemistry (General)**  
**SW846 9060A**

**Prep**

Method N/A      Container 3223592001-E(Hydrochloric Acid)  
Batch N/A      Aliquot 6 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 9060A      Fraction  
Batch 815214      Dilution 1  
Date 01/25/2022 9:27 PM      Analyst PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	1.9	mg/L	0.50	c

**Wet Chemistry (General)**  
**SW846 9066**

**Prep**

Method 420.4/9066      Container 3223592001-G(Sulfuric Acid)  
Batch 814878      Aliquot 100 mL  
Date 01/28/2022 9:03 AM      Tech. AKH

**Analysis**

Method SW846 9066      Fraction  
Batch 815975      Dilution 1  
Date 01/28/2022 2:24 PM      Analyst AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C.ND

**Wet Chemistry (General)**  
**ASTM D6919-09**

**Prep**

Method N/A      Container 3223592001-A(Sulfuric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method ASTM D6919-09      Fraction  
Batch 817871      Dilution 10  
Date 02/07/2022 12:13 PM      Analyst JXL



Client Sample ID	<b>CWMP002W</b>	Collected	<b>01/21/2022 11:21 AM</b>
Lab Sample ID	<b>3223592001</b>	Lab Receipt	<b>01/21/2022 5:02 PM</b>

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	ND	mg/L	0.100	C,ND

**Wet Chemistry (General)  
SM2130B-2011**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	SM2130B-2011
<u>Batch</u>	N/A	<u>Batch</u>	814710
<u>Date</u>	N/A	<u>Date</u>	01/22/2021 7:35 AM
<u>Container</u>	3223592001-B(Unpreserved)	<u>Fraction</u>	
<u>Aliquot</u>	25 mL	<u>Dilution</u>	1
<u>Tech.</u>	N/A	<u>Analyst</u>	LXZ

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	0.21	NTU	0.10	C

**Wet Chemistry (General)  
SM2320B-2011**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	SM2320B-2011
<u>Batch</u>	N/A	<u>Batch</u>	814791
<u>Date</u>	N/A	<u>Date</u>	01/24/2022 9:11 PM
<u>Container</u>	3223592001-B(Unpreserved)	<u>Fraction</u>	
<u>Aliquot</u>	50 mL	<u>Dilution</u>	1
<u>Tech.</u>	N/A	<u>Analyst</u>	MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	52	mg/L	5	C

**Wet Chemistry (General)  
SM2320B-2011**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	SM2320B-2011
<u>Batch</u>	N/A	<u>Batch</u>	814791
<u>Date</u>	N/A	<u>Date</u>	01/24/2022 9:11 PM
<u>Container</u>	3223592001-B(Unpreserved)	<u>Fraction</u>	
<u>Aliquot</u>	50 mL	<u>Dilution</u>	1
<u>Tech.</u>	N/A	<u>Analyst</u>	MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	52	mg/L	5	C,1

**Wet Chemistry (General)  
S4500HB-11**



Client Sample ID **CWMP002W**  
 Lab Sample ID **3223592001**

Collected **01/21/2022 11:21 AM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Prep**

Method N/A                      Container 3223592001-B(Unpreserved)  
Batch N/A                        Aliquot 50 mL  
Date N/A                         Tech. N/A

**Analysis**

Method S4500HB-11                      Fraction  
Batch 814791                                Dilution 1  
Date 01/24/2022 9:11 PM                Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	6.87	pH_Units		C,3

**FLD  
Field**

**Prep**

Method N/A                      Container 3223592001-D(Unpreserved)  
Batch N/A                        Aliquot  
Date N/A                         Tech. N/A

**Analysis**

Method Field                                Fraction  
Batch 816408                                Dilution 1  
Date 01/21/2022 11:19 AM                Analyst BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Depth to Water Level	DWL	63.21	Feet		C
Dissolved Oxygen	DO	6.12	mg/L	0.01	C
Elev Top MW Casing above MSL	781	525.81	Feet		C
Ground Water Elevation	GWE	462.60	ft/MSL		C
Oxidation-Reduction Potential	ORP	132	mV		C
pH, Field (SM4500B)	PHF	5.54	pH_Units		C
Sample Depth	SD	85.00	Feet		C
Specific Conductance, Field	CONDf	573	umhos/cm	1	C
Temperature	Temp	13.53	Deg. C		C
Total Well Depth	TWD	100.00	Feet		C
Turbidity, Field	TURBF	3	NTU	1	C





Client Sample ID **CWMP004W**  
 Lab Sample ID **3223592002**

Collected **01/21/2022 11:52 AM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A      Container 3223592002-H(Hydrochloric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 8260B      Fraction VOA\_Trace  
Batch 815611      Dilution 1  
Date 01/27/2022 5:51 AM      Analyst PDK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	88.50 %	62 - 133	
4-Bromofluorobenzene	460-00-4	103 %	79 - 114	
Dibromofluoromethane	1868-53-7	92.60 %	78 - 116	
Toluene-d8	2037-26-5	93.50 %	76 - 127	

**Metals Analytical**  
**SW846 6010C**

**Prep**

Method SW846 3015      Container 3223592002-J1(Nitric Acid)  
Batch 815246      Aliquot 45 mL  
Date 01/25/2022 8:23 PM      Tech. SXC

**Analysis**

Method SW846 6010C      Fraction ICP\_AES  
Batch 815479      Dilution 1  
Date 01/26/2022 2:01 PM      Analyst SRT

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	21.3	mg/L	0.11	C
Iron, Total	7439-89-6	ND	mg/L	0.067	C,ND
Magnesium, Total	7439-95-4	7.5	mg/L	0.11	C
Manganese, Total	7439-96-5	0.0080	mg/L	0.0056	C



Client Sample ID **CWMP004W**  
 Lab Sample ID **3223592002**

Collected **01/21/2022 11:52 AM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	1.4	mg/L	0.56	C
Sodium, Total	7440-23-5	16.9	mg/L	0.56	C

**Wet Chemistry (General)**  
**S2540C-11**

**Prep**

Method N/A Container 3223592002-B(Unpreserved)  
 Batch N/A Aliquot  
 Date N/A Tech. N/A

**Analysis**

Method S2540C-11 Fraction  
 Batch 815196 Dilution 1  
 Date 01/28/2022 7:51 AM Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	196	mg/L	25	C

**Wet Chemistry (General)**  
**EPA 300.0**

**Prep**

Method N/A Container 3223592002-B(Unpreserved)  
 Batch N/A Aliquot 5 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 300.0 Fraction  
 Batch 815951 Dilution 2  
 Date 01/22/2022 5:16 PM Analyst GJB

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	47.4	mg/L	2.0	C,2
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	5.7	mg/L	1.0	C
Sulfate	SO4	6.7	mg/L	2.0	C

**Wet Chemistry (General)**  
**EPA 410.4**

**Prep**

Method N/A Container 3223592002-A(Sulfuric Acid)  
 Batch N/A Aliquot 2 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 410.4 Fraction  
 Batch 818826 Dilution 1  
 Date 02/10/2022 12:56 PM Analyst ALK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	ND	mg/L	15	C,ND



Client Sample ID	<b>CWMP004W</b>	Collected	<b>01/21/2022 11:52 AM</b>
Lab Sample ID	<b>3223592002</b>	Lab Receipt	<b>01/21/2022 5:02 PM</b>

**Wet Chemistry (General)**  
**SW846 9050A**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592002-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SW846 9050A	<u>Fraction</u>	
<u>Batch</u>	815197	<u>Dilution</u>	1
<u>Date</u>	01/25/2022 3:55 PM	<u>Analyst</u>	JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	290	umhos/cm	1	c

**Wet Chemistry (General)**  
**SW846 9060A**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592002-E(Hydrochloric Acid)
<u>Batch</u>	N/A	<u>Aliquot</u>	6 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SW846 9060A	<u>Fraction</u>	
<u>Batch</u>	815214	<u>Dilution</u>	1
<u>Date</u>	01/25/2022 9:27 PM	<u>Analyst</u>	PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	0.61	mg/L	0.50	c

**Wet Chemistry (General)**  
**SW846 9066**

**Prep**

<u>Method</u>	420.4/9066	<u>Container</u>	3223592002-G(Sulfuric Acid)
<u>Batch</u>	814878	<u>Aliquot</u>	100 mL
<u>Date</u>	01/28/2022 9:03 AM	<u>Tech.</u>	AKH

**Analysis**

<u>Method</u>	SW846 9066	<u>Fraction</u>	
<u>Batch</u>	815975	<u>Dilution</u>	1
<u>Date</u>	01/28/2022 2:27 PM	<u>Analyst</u>	AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C.ND

**Wet Chemistry (General)**  
**ASTM D6919-09**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592002-A(Sulfuric Acid)
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	ASTM D6919-09	<u>Fraction</u>	
<u>Batch</u>	817871	<u>Dilution</u>	10
<u>Date</u>	02/07/2022 12:27 PM	<u>Analyst</u>	JXL



Client Sample ID	<b>CWMP004W</b>	Collected	<b>01/21/2022 11:52 AM</b>
Lab Sample ID	<b>3223592002</b>	Lab Receipt	<b>01/21/2022 5:02 PM</b>

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	ND	mg/L	0.100	C,ND

**Wet Chemistry (General)  
SM2130B-2011**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592002-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	25 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SM2130B-2011	<u>Fraction</u>	
<u>Batch</u>	814710	<u>Dilution</u>	1
<u>Date</u>	01/22/2021 7:35 AM	<u>Analyst</u>	LXZ

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	0.16	NTU	0.10	C

**Wet Chemistry (General)  
SM2320B-2011**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592002-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SM2320B-2011	<u>Fraction</u>	
<u>Batch</u>	814791	<u>Dilution</u>	1
<u>Date</u>	01/24/2022 9:11 PM	<u>Analyst</u>	MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	26	mg/L	5	C

**Wet Chemistry (General)  
SM2320B-2011**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592002-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SM2320B-2011	<u>Fraction</u>	
<u>Batch</u>	814791	<u>Dilution</u>	1
<u>Date</u>	01/24/2022 9:11 PM	<u>Analyst</u>	MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	26	mg/L	5	C,1

**Wet Chemistry (General)  
S4500HB-11**



Client Sample ID **CWMP004W**  
 Lab Sample ID **3223592002**

Collected **01/21/2022 11:52 AM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Prep**

Method N/A      Container 3223592002-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method S4500HB-11      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	6.82	pH_Units		C,3

**FLD  
Field**

**Prep**

Method N/A      Container 3223592002-D(Unpreserved)  
Batch N/A      Aliquot  
Date N/A      Tech. N/A

**Analysis**

Method Field      Fraction  
Batch 816408      Dilution 1  
Date 01/21/2022 11:44 AM      Analyst BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Depth to Water Level	DWL	99.06	Feet		C
Dissolved Oxygen	DO	6.83	mg/L	0.01	C
Elev Top MW Casing above MSL	781	529.53	Feet		C
Ground Water Elevation	GWE	430.47	ft/MSL		C
Oxidation-Reduction Potential	ORP	279	mV		C
pH, Field (SM4500B)	PHF	5.38	pH_Units		C
Sample Depth	SD	130.00	Feet		C
Specific Conductance, Field	CONDf	379	umhos/cm	1	C
Temperature	Temp	14.03	Deg. C		C
Total Well Depth	TWD	140.00	Feet		C
Turbidity, Field	TURBF	ND	NTU	1	C,ND



Client Sample ID **CWMP003W**  
 Lab Sample ID **3223592003**

Collected **01/21/2022 12:05 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A      Container 3223592003-H(Hydrochloric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 8260B      Fraction VOA\_Trace  
Batch 815611      Dilution 1  
Date 01/27/2022 6:13 AM      Analyst PDK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	1.9	ug/L	1.0	C
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	88.30 %	62 - 133	
4-Bromofluorobenzene	460-00-4	107 %	79 - 114	
Dibromofluoromethane	1868-53-7	92.20 %	78 - 116	
Toluene-d8	2037-26-5	94.80 %	76 - 127	

**Metals Analytical**  
**SW846 6010C**

**Prep**

Method SW846 3015      Container 3223592003-J1(Nitric Acid)  
Batch 815246      Aliquot 45 mL  
Date 01/25/2022 8:23 PM      Tech. SXC

**Analysis**

Method SW846 6010C      Fraction ICP\_AES  
Batch 815479      Dilution 1  
Date 01/26/2022 2:04 PM      Analyst SRT

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	22.9	mg/L	0.11	C
Iron, Total	7439-89-6	ND	mg/L	0.067	C,ND
Magnesium, Total	7439-95-4	8.5	mg/L	0.11	C
Manganese, Total	7439-96-5	0.0064	mg/L	0.0056	C



Client Sample ID **CWMP003W**  
 Lab Sample ID **3223592003**

Collected **01/21/2022 12:05 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	1.6	mg/L	0.56	C
Sodium, Total	7440-23-5	20.6	mg/L	0.56	C

**Wet Chemistry (General)  
 S2540C-11**

**Prep**

Method N/A Container 3223592003-B(Unpreserved)  
 Batch N/A Aliquot  
 Date N/A Tech. N/A

**Analysis**

Method S2540C-11 Fraction  
 Batch 815196 Dilution 1  
 Date 01/28/2022 7:51 AM Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	226	mg/L	25	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

Method N/A Container 3223592003-B(Unpreserved)  
 Batch N/A Aliquot 5 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 300.0 Fraction  
 Batch 815951 Dilution 2  
 Date 01/22/2022 5:33 PM Analyst GJB

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	63.2	mg/L	2.0	C,2
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	6.9	mg/L	1.0	C
Sulfate	SO4	6.0	mg/L	2.0	C

**Wet Chemistry (General)  
 EPA 410.4**

**Prep**

Method N/A Container 3223592003-A(Sulfuric Acid)  
 Batch N/A Aliquot 2 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 410.4 Fraction  
 Batch 818826 Dilution 1  
 Date 02/10/2022 12:56 PM Analyst ALK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	ND	mg/L	15	C,ND



Client Sample ID	<b>CWMP003W</b>	Collected	<b>01/21/2022 12:05 PM</b>
Lab Sample ID	<b>3223592003</b>	Lab Receipt	<b>01/21/2022 5:02 PM</b>

**Wet Chemistry (General)**  
**SW846 9050A**

Prep		Analysis	
Method	N/A	Method	SW846 9050A
Batch	N/A	Batch	815197
Date	N/A	Date	01/25/2022 3:55 PM
Container	3223592003-B(Unpreserved)	Fraction	
Aliquot	50 mL	Dilution	1
Tech.	N/A	Analyst	JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	346	umhos/cm	1	c

**Wet Chemistry (General)**  
**SW846 9060A**

Prep		Analysis	
Method	N/A	Method	SW846 9060A
Batch	N/A	Batch	815214
Date	N/A	Date	01/25/2022 9:27 PM
Container	3223592003-E(Hydrochloric Acid)	Fraction	
Aliquot	6 mL	Dilution	1
Tech.	N/A	Analyst	PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	0.59	mg/L	0.50	c

**Wet Chemistry (General)**  
**SW846 9066**

Prep		Analysis	
Method	420.4/9066	Method	SW846 9066
Batch	814878	Batch	815975
Date	01/28/2022 9:03 AM	Date	01/28/2022 2:30 PM
Container	3223592003-G(Sulfuric Acid)	Fraction	
Aliquot	100 mL	Dilution	1
Tech.	AKH	Analyst	AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C.ND

**Wet Chemistry (General)**  
**ASTM D6919-09**

Prep		Analysis	
Method	N/A	Method	ASTM D6919-09
Batch	N/A	Batch	817871
Date	N/A	Date	02/07/2022 12:41 PM
Container	3223592003-A(Sulfuric Acid)	Fraction	
Aliquot	5 mL	Dilution	10
Tech.	N/A	Analyst	JXL





Client Sample ID **CWMP003W**  
 Lab Sample ID **3223592003**

Collected **01/21/2022 12:05 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	0.176	mg/L	0.100	C

**Wet Chemistry (General)  
 SM2130B-2011**

**Prep**

Method N/A      Container 3223592003-B(Unpreserved)  
Batch N/A      Aliquot 25 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2130B-2011      Fraction  
Batch 814710      Dilution 1  
Date 01/22/2021 7:35 AM      Analyst LXZ

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	0.75	NTU	0.10	C

**Wet Chemistry (General)  
 SM2320B-2011**

**Prep**

Method N/A      Container 3223592003-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	19	mg/L	5	C

**Wet Chemistry (General)  
 SM2320B-2011**

**Prep**

Method N/A      Container 3223592003-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 815165      Dilution 1  
Date 01/25/2022 11:17 AM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	19	mg/L	5	C,1

**Wet Chemistry (General)  
 S4500HB-11**



Client Sample ID **CWMP003W** Collected **01/21/2022 12:05 PM**  
 Lab Sample ID **3223592003** Lab Receipt **01/21/2022 5:02 PM**

**Prep**

Method N/A Container 3223592003-B(Unpreserved)  
Batch N/A Aliquot 50 mL  
Date N/A Tech. N/A

**Analysis**

Method S4500HB-11 Fraction  
Batch 814791 Dilution 1  
Date 01/24/2022 9:11 PM Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	6.71	pH_Units		C,3

**FLD  
Field**

**Prep**

Method N/A Container 3223592003-D(Unpreserved)  
Batch N/A Aliquot  
Date N/A Tech. N/A

**Analysis**

Method Field Fraction  
Batch 816408 Dilution 1  
Date 01/21/2022 11:59 AM Analyst BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Depth to Water Level	DWL	64.29	Feet		C
Dissolved Oxygen	DO	12.82	mg/L	0.01	C
Elev Top MW Casing above MSL	781	524.21	Feet		C
Ground Water Elevation	GWE	459.92	ft/MSL		C
Oxidation-Reduction Potential	ORP	313	mV		C
pH, Field (SM4500B)	PHF	5.07	pH_Units		C
Sample Depth	SD	100.00	Feet		C
Specific Conductance, Field	CONDf	442	umhos/cm	1	C
Temperature	Temp	14.29	Deg. C		C
Total Well Depth	TWD	140.00	Feet		C
Turbidity, Field	TURBF	1	NTU	1	C



Client Sample ID **CWMP018S**  
 Lab Sample ID **3223592004**

Collected **01/21/2022 12:55 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A      Container 3223592004-H(Hydrochloric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 8260B      Fraction VOA\_Trace  
Batch 815611      Dilution 1  
Date 01/27/2022 6:36 AM      Analyst PDK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	89.60 %	62 - 133	
4-Bromofluorobenzene	460-00-4	107 %	79 - 114	
Dibromofluoromethane	1868-53-7	94.20 %	78 - 116	
Toluene-d8	2037-26-5	95.30 %	76 - 127	

**Metals Analytical**  
**SW846 6010C**

**Prep**

Method SW846 3015      Container 3223592004-JI(Nitric Acid)  
Batch 815246      Aliquot 45 mL  
Date 01/25/2022 8:23 PM      Tech. SXC

**Analysis**

Method SW846 6010C      Fraction ICP\_AES  
Batch 815479      Dilution 1  
Date 01/26/2022 2:08 PM      Analyst SRT

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	80.1	mg/L	0.11	C
Iron, Total	7439-89-6	0.27	mg/L	0.067	C
Magnesium, Total	7439-95-4	57.9	mg/L	0.11	C
Manganese, Total	7439-96-5	0.20	mg/L	0.0056	C



Client Sample ID **CWMP018S**  
 Lab Sample ID **3223592004**

Collected **01/21/2022 12:55 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	18.7	mg/L	0.56	C
Sodium, Total	7440-23-5	221	mg/L	0.56	C

**Wet Chemistry (General)  
 S2540C-11**

**Prep**

Method N/A      Container 3223592004-B(Unpreserved)  
Batch N/A      Aliquot  
Date N/A      Tech. N/A

**Analysis**

Method S2540C-11      Fraction  
Batch 815196      Dilution 1  
Date 01/28/2022 7:51 AM      Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	1040	mg/L	25	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

Method N/A      Container 3223592004-B(Unpreserved)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method EPA 300.0      Fraction  
Batch 815951      Dilution 2  
Date 01/22/2022 5:50 PM      Analyst GJB

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	13.4	mg/L	1.0	C,0
Sulfate	SO4	30.0	mg/L	2.0	C

**Prep**

Method N/A      Container 3223592004-B(Unpreserved)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method EPA 300.0      Fraction  
Batch 817222      Dilution 25  
Date 02/03/2022 3:00 AM      Analyst MID

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	402	mg/L	25.0	C

**Wet Chemistry (General)  
 EPA 410.4**



Client Sample ID	<b>CWMP018S</b>	Collected	<b>01/21/2022 12:55 PM</b>
Lab Sample ID	<b>3223592004</b>	Lab Receipt	<b>01/21/2022 5:02 PM</b>

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592004-A(Sulfuric Acid)
<u>Batch</u>	N/A	<u>Aliquot</u>	2 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	EPA 410.4	<u>Fraction</u>	
<u>Batch</u>	818236	<u>Dilution</u>	1
<u>Date</u>	02/10/2022 5:00 PM	<u>Analyst</u>	ALK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	24	mg/L	15	C

**Wet Chemistry (General)  
 SW846 9050A**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592004-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SW846 9050A	<u>Fraction</u>	
<u>Batch</u>	815197	<u>Dilution</u>	1
<u>Date</u>	01/25/2022 3:55 PM	<u>Analyst</u>	JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	1950	umhos/cm	1	C

**Wet Chemistry (General)  
 SW846 9060A**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592004-E(Hydrochloric Acid)
<u>Batch</u>	N/A	<u>Aliquot</u>	6 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SW846 9060A	<u>Fraction</u>	
<u>Batch</u>	815214	<u>Dilution</u>	1
<u>Date</u>	01/25/2022 9:27 PM	<u>Analyst</u>	PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	7.4	mg/L	0.50	C

**Wet Chemistry (General)  
 SW846 9066**

**Prep**

<u>Method</u>	420.4/9066	<u>Container</u>	3223592004-G(Sulfuric Acid)
<u>Batch</u>	814878	<u>Aliquot</u>	100 mL
<u>Date</u>	01/28/2022 9:03 AM	<u>Tech.</u>	AKH

**Analysis**

<u>Method</u>	SW846 9066	<u>Fraction</u>	
<u>Batch</u>	815975	<u>Dilution</u>	1
<u>Date</u>	01/28/2022 2:48 PM	<u>Analyst</u>	AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C,ND



Client Sample ID **CWMP018S**  
 Lab Sample ID **3223592004**

Collected **01/21/2022 12:55 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Wet Chemistry (General)**  
**ASTM D6919-09**

**Prep**

Method N/A      Container 3223592004-A(Sulfuric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method ASTM D6919-09      Fraction  
Batch 817871      Dilution 10  
Date 02/07/2022 12:55 PM      Analyst JXL

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	0.144	mg/L	0.100	c

**Wet Chemistry (General)**  
**SM2130B-2011**

**Prep**

Method N/A      Container 3223592004-B(Unpreserved)  
Batch N/A      Aliquot 25 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2130B-2011      Fraction  
Batch 814710      Dilution 1  
Date 01/22/2021 7:35 AM      Analyst LXZ

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	1.89	NTU	0.10	c

**Wet Chemistry (General)**  
**SM2320B-2011**

**Prep**

Method N/A      Container 3223592004-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	231	mg/L	5	c

**Wet Chemistry (General)**  
**SM2320B-2011**

**Prep**

Method N/A      Container 3223592004-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW



Client Sample ID **CWMP018S**  
 Lab Sample ID **3223592004**

Collected **01/21/2022 12:55 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	244	mg/L	5	C,1

**Wet Chemistry (General)  
 S4500HB-11**

**Prep**

Method N/A      Container 3223592004-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method S4500HB-11      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	8.44	pH_Units		C,3

**FLD  
 Field**

**Prep**

Method N/A      Container 3223592004-D(Unpreserved)  
Batch N/A      Aliquot  
Date N/A      Tech. N/A

**Analysis**

Method Field      Fraction  
Batch 816408      Dilution 1  
Date 01/21/2022 12:00 AM      Analyst BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Dissolved Oxygen	DO	15.05	mg/L	0.01	C
Oxidation-Reduction Potential	ORP	276	mV		C
pH, Field (SM4500B)	PHF	7.73	pH_Units		C
Specific Conductance, Field	CONDf	2583	umhos/cm	1	C
Temperature	Temp	1.23	Deg. C		C
Turbidity, Field	TURBF	1	NTU	1	C



Client Sample ID **CWMP017S**  
 Lab Sample ID **3223592005**

Collected **01/21/2022 1:10 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A                      Container 3223592005-H(Hydrochloric Acid)  
Batch N/A                        Aliquot 5 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 8260B                      Fraction VOA\_Trace  
Batch 815611                                Dilution 1  
Date 01/27/2022 6:58 AM                Analyst PDK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	88.70 %	62 - 133	
4-Bromofluorobenzene	460-00-4	106 %	79 - 114	
Dibromofluoromethane	1868-53-7	90.90 %	78 - 116	
Toluene-d8	2037-26-5	95.70 %	76 - 127	

**Metals Analytical**  
**SW846 6010C**

**Prep**

Method SW846 3015                      Container 3223592005-J2(Nitric Acid)  
Batch 815751                                Aliquot 45 mL  
Date 01/27/2022 7:44 PM                Tech. SXC

**Analysis**

Method SW846 6010C                      Fraction ICP\_AES  
Batch 815947                                Dilution 1  
Date 01/28/2022 9:19 AM                Analyst SRT

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	60.5	mg/L	0.11	C
Iron, Total	7439-89-6	0.95	mg/L	0.067	C
Magnesium, Total	7439-95-4	77.6	mg/L	0.11	C
Manganese, Total	7439-96-5	0.084	mg/L	0.0056	C





Client Sample ID **CWMP017S**  
 Lab Sample ID **3223592005**

Collected **01/21/2022 1:10 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	11.9	mg/L	0.56	C
Sodium, Total	7440-23-5	275	mg/L	0.56	C

**Wet Chemistry (General)  
 S2540C-11**

**Prep**

Method N/A      Container 3223592005-B(Unpreserved)  
 Batch N/A      Aliquot  
 Date N/A      Tech. N/A

**Analysis**

Method S2540C-11      Fraction  
 Batch 815196      Dilution 1  
 Date 01/28/2022 7:51 AM      Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	1210	mg/L	25	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

Method N/A      Container 3223592005-B(Unpreserved)  
 Batch N/A      Aliquot 5 mL  
 Date N/A      Tech. N/A

**Analysis**

Method EPA 300.0      Fraction  
 Batch 815951      Dilution 20  
 Date 01/22/2022 6:08 PM      Analyst GJB

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	461	mg/L	20.0	C,2
Fluoride	F	ND	mg/L	2.0	C,ND
Nitrate-N	NO3	15.2	mg/L	10.0	C
Sulfate	SO4	30.2	mg/L	20.0	C

**Wet Chemistry (General)  
 EPA 410.4**

**Prep**

Method N/A      Container 3223592005-A(Sulfuric Acid)  
 Batch N/A      Aliquot 2 mL  
 Date N/A      Tech. N/A

**Analysis**

Method EPA 410.4      Fraction  
 Batch 818826      Dilution 1  
 Date 02/10/2022 12:56 PM      Analyst ALK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	ND	mg/L	15	C,ND



Client Sample ID **CWMP017S**  
 Lab Sample ID **3223592005**

Collected **01/21/2022 1:10 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Wet Chemistry (General)**  
**SW846 9050A**

**Prep**

Method N/A      Container 3223592005-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 9050A      Fraction  
Batch 815197      Dilution 10  
Date 01/25/2022 3:55 PM      Analyst JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	2500	umhos/cm	10	c

**Wet Chemistry (General)**  
**SW846 9060A**

**Prep**

Method N/A      Container 3223592005-E(Hydrochloric Acid)  
Batch N/A      Aliquot 6 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 9060A      Fraction  
Batch 815214      Dilution 1  
Date 01/25/2022 9:27 PM      Analyst PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	4.0	mg/L	0.50	c

**Wet Chemistry (General)**  
**SW846 9066**

**Prep**

Method 420.4/9066      Container 3223592005-G(Sulfuric Acid)  
Batch 814878      Aliquot 100 mL  
Date 01/28/2022 9:03 AM      Tech. AKH

**Analysis**

Method SW846 9066      Fraction  
Batch 815975      Dilution 1  
Date 01/28/2022 2:50 PM      Analyst AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C.ND

**Wet Chemistry (General)**  
**ASTM D6919-09**

**Prep**

Method N/A      Container 3223592005-A(Sulfuric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method ASTM D6919-09      Fraction  
Batch 817871      Dilution 10  
Date 02/07/2022 1:09 PM      Analyst JXL



Client Sample ID **CWMP017S**  
 Lab Sample ID **3223592005**

Collected **01/21/2022 1:10 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	ND	mg/L	0.100	C,ND

**Wet Chemistry (General)**  
**SM2130B-2011**

**Prep**

Method N/A      Container 3223592005-B(Unpreserved)  
Batch N/A      Aliquot 25 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2130B-2011      Fraction  
Batch 814710      Dilution 1  
Date 01/22/2021 7:35 AM      Analyst LXZ

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	5.84	NTU	0.10	C

**Wet Chemistry (General)**  
**SM2320B-2011**

**Prep**

Method N/A      Container 3223592005-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	332	mg/L	5	C

**Wet Chemistry (General)**  
**SM2320B-2011**

**Prep**

Method N/A      Container 3223592005-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	332	mg/L	5	C,1

**Wet Chemistry (General)**  
**S4500HB-11**



Client Sample ID **CWMP017S** Collected **01/21/2022 1:10 PM**  
 Lab Sample ID **3223592005** Lab Receipt **01/21/2022 5:02 PM**

**Prep**

Method N/A Container 3223592005-B(Unpreserved)  
Batch N/A Aliquot 50 mL  
Date N/A Tech. N/A

**Analysis**

Method S4500HB-11 Fraction  
Batch 814791 Dilution 1  
Date 01/24/2022 9:11 PM Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	8.22	pH_Units		C,3

**FLD Field**

**Prep**

Method N/A Container 3223592005-D(Unpreserved)  
Batch N/A Aliquot  
Date N/A Tech. N/A

**Analysis**

Method Field Fraction  
Batch 816408 Dilution 1  
Date 01/21/2022 1:10 PM Analyst BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Dissolved Oxygen	DO	13.51	mg/L	0.01	C
Oxidation-Reduction Potential	ORP	237	mV		C
pH, Field (SM4500B)	PHF	7.50	pH_Units		C
Specific Conductance, Field	CONDf	3166	umhos/cm	1	C
Temperature	Temp	5.85	Deg. C		C
Turbidity, Field	TURBF	3	NTU	1	C



Client Sample ID **CWMP012W**  
 Lab Sample ID **3223592006**

Collected **01/21/2022 2:05 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A                      Container 3223592006-I(Hydrochloric Acid)  
Batch N/A                        Aliquot 5 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 8260B                      Fraction VOA\_Trace  
Batch 815675                                Dilution 1  
Date 01/27/2022 5:09 PM                      Analyst DPC

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	89.10 %	62 - 133	
4-Bromofluorobenzene	460-00-4	105 %	79 - 114	
Dibromofluoromethane	1868-53-7	94.70 %	78 - 116	
Toluene-d8	2037-26-5	93.10 %	76 - 127	

**Metals Analytical**  
**SW846 6010C**

**Prep**

Method SW846 3015                      Container 3223592006-J1(Nitric Acid)  
Batch 815246                                Aliquot 45 mL  
Date 01/25/2022 8:23 PM                      Tech. SXC

**Analysis**

Method SW846 6010C                      Fraction ICP\_AES  
Batch 815479                                Dilution 1  
Date 01/26/2022 2:12 PM                      Analyst SRT

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	32.8	mg/L	0.11	C
Iron, Total	7439-89-6	33.1	mg/L	0.067	C
Magnesium, Total	7439-95-4	9.4	mg/L	0.11	C
Manganese, Total	7439-96-5	0.29	mg/L	0.0056	C



Client Sample ID **CWMP012W**  
 Lab Sample ID **3223592006**

Collected **01/21/2022 2:05 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	1.5	mg/L	0.56	C
Sodium, Total	7440-23-5	14.2	mg/L	0.56	C

**Wet Chemistry (General)  
 S2540C-11**

**Prep**

Method N/A      Container 3223592006-B(Unpreserved)  
 Batch N/A      Aliquot  
 Date N/A      Tech. N/A

**Analysis**

Method S2540C-11      Fraction  
 Batch 815196      Dilution 1  
 Date 01/28/2022 7:51 AM      Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	224	mg/L	25	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

Method N/A      Container 3223592006-B(Unpreserved)  
 Batch N/A      Aliquot 5 mL  
 Date N/A      Tech. N/A

**Analysis**

Method EPA 300.0      Fraction  
 Batch 815951      Dilution 100  
 Date 01/22/2022 7:35 PM      Analyst GJB

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	145	mg/L	100	C,2,4
Fluoride	F	ND	mg/L	10.0	C,ND
Nitrate-N	NO3	ND	mg/L	50.0	C,ND
Sulfate	SO4	ND	mg/L	100	C,ND

**Wet Chemistry (General)  
 EPA 410.4**

**Prep**

Method N/A      Container 3223592006-A(Sulfuric Acid)  
 Batch N/A      Aliquot 2 mL  
 Date N/A      Tech. N/A

**Analysis**

Method EPA 410.4      Fraction  
 Batch 818826      Dilution 1  
 Date 02/10/2022 12:56 PM      Analyst ALK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	ND	mg/L	15	C,ND



Client Sample ID **CWMP012W**  
 Lab Sample ID **3223592006**

Collected **01/21/2022 2:05 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Wet Chemistry (General)**  
**SW846 9050A**

**Prep**

Method N/A                      Container 3223592006-B(Unpreserved)  
Batch N/A                        Aliquot 50 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 9050A                      Fraction  
Batch 815197                                 Dilution 1  
Date 01/25/2022 3:55 PM                      Analyst JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	337	umhos/cm	1	c

**Wet Chemistry (General)**  
**SW846 9060A**

**Prep**

Method N/A                      Container 3223592006-E(Hydrochloric Acid)  
Batch N/A                        Aliquot 6 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 9060A                      Fraction  
Batch 815555                                 Dilution 1  
Date 01/26/2022 6:06 PM                      Analyst PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	1.2	mg/L	0.50	c

**Wet Chemistry (General)**  
**SW846 9066**

**Prep**

Method 420.4/9066                      Container 3223592006-G(Sulfuric Acid)  
Batch 814878                                 Aliquot 100 mL  
Date 01/28/2022 9:03 AM                      Tech. AKH

**Analysis**

Method SW846 9066                      Fraction  
Batch 815975                                 Dilution 1  
Date 01/28/2022 2:54 PM                      Analyst AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C.ND

**Wet Chemistry (General)**  
**ASTM D6919-09**

**Prep**

Method N/A                      Container 3223592006-A(Sulfuric Acid)  
Batch N/A                        Aliquot 5 mL  
Date N/A                         Tech. N/A

**Analysis**

Method ASTM D6919-09                      Fraction  
Batch 817871                                 Dilution 10  
Date 02/07/2022 1:51 PM                      Analyst JXL



Client Sample ID **CWMP012W**  
 Lab Sample ID **3223592006**

Collected **01/21/2022 2:05 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	ND	mg/L	0.100	C,ND

**Wet Chemistry (General)  
 SM2130B-2011**

**Prep**

Method N/A      Container 3223592006-B(Unpreserved)  
Batch N/A      Aliquot 25 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2130B-2011      Fraction  
Batch 814710      Dilution 1  
Date 01/22/2021 7:35 AM      Analyst LXZ

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	302	NTU	0.10	C

**Wet Chemistry (General)  
 SM2320B-2011**

**Prep**

Method N/A      Container 3223592006-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	74	mg/L	5	C

**Wet Chemistry (General)  
 SM2320B-2011**

**Prep**

Method N/A      Container 3223592006-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	74	mg/L	5	C,1

**Wet Chemistry (General)  
 S4500HB-11**





Client Sample ID **CWMP012W** Collected **01/21/2022 2:05 PM**  
 Lab Sample ID **3223592006** Lab Receipt **01/21/2022 5:02 PM**

**Prep**

Method N/A Container 3223592006-B(Unpreserved)  
Batch N/A Aliquot 50 mL  
Date N/A Tech. N/A

**Analysis**

Method S4500HB-11 Fraction  
Batch 814791 Dilution 1  
Date 01/24/2022 9:11 PM Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	7.19	pH_Units		C,3

**FLD  
Field**

**Prep**

Method N/A Container 3223592006-D(Unpreserved)  
Batch N/A Aliquot  
Date N/A Tech. N/A

**Analysis**

Method Field Fraction  
Batch 816408 Dilution 1  
Date 01/21/2022 1:57 PM Analyst BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Depth to Water Level	DWL	64.61	Feet		C
Dissolved Oxygen	DO	8.70	mg/L	0.01	C
Oxidation-Reduction Potential	ORP	204	mV		C
pH, Field (SM4500B)	PHF	6.25	pH_Units		C
Specific Conductance, Field	CONDf	474	umhos/cm	1	C
Temperature	Temp	9.64	Deg. C		C
Turbidity, Field	TURBF	321	NTU	1	C



Client Sample ID **Trip Blank**  
 Lab Sample ID **3223592007**

Collected **01/21/2022 5:02 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A                      Container 3223592007-A(Hydrochloric Acid)  
Batch N/A                        Aliquot 5 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 8260B                      Fraction VOA\_Trace  
Batch 815675                                Dilution 1  
Date 01/27/2022 11:09 AM                Analyst DPC

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	87.90 %	62 - 133	
4-Bromofluorobenzene	460-00-4	105 %	79 - 114	
Dibromofluoromethane	1868-53-7	91.50 %	78 - 116	
Toluene-d8	2037-26-5	94.40 %	76 - 127	



Client Sample ID **Field Blank**  
 Lab Sample ID **3223592008**

Collected **01/21/2022 2:49 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A      Container 3223592008-H(Hydrochloric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 8260B      Fraction VOA\_Trace  
Batch 815675      Dilution 1  
Date 01/27/2022 11:32 AM      Analyst DPC

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	92%	62 - 133	
4-Bromofluorobenzene	460-00-4	103%	79 - 114	
Dibromofluoromethane	1868-53-7	93%	78 - 116	
Toluene-d8	2037-26-5	94.70%	76 - 127	

**Metals Analytical**  
**SW846 6010C**

**Prep**

Method SW846 3015      Container 3223592008-J1(Nitric Acid)  
Batch 815246      Aliquot 45 mL  
Date 01/25/2022 8:23 PM      Tech. SXC

**Analysis**

Method SW846 6010C      Fraction ICP\_AES  
Batch 815479      Dilution 1  
Date 01/26/2022 2:15 PM      Analyst SRT

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	ND	mg/L	0.11	C,ND
Iron, Total	7439-89-6	ND	mg/L	0.067	C,ND
Magnesium, Total	7439-95-4	ND	mg/L	0.11	C,ND
Manganese, Total	7439-96-5	ND	mg/L	0.0056	C,ND



Client Sample ID **Field Blank**  
 Lab Sample ID **3223592008**

Collected **01/21/2022 2:49 PM**  
 Lab Receipt **01/21/2022 5:02 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	ND	mg/L	0.56	C,ND
Sodium, Total	7440-23-5	ND	mg/L	0.56	C,ND

**Wet Chemistry (General)  
 S2540C-11**

**Prep**

Method N/A Container 3223592008-B(Unpreserved)  
 Batch N/A Aliquot  
 Date N/A Tech. N/A

**Analysis**

Method S2540C-11 Fraction  
 Batch 815196 Dilution 1  
 Date 01/28/2022 7:51 AM Analyst SMS

**RESULTS**

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

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

Method N/A Container 3223592008-B(Unpreserved)  
 Batch N/A Aliquot 5 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 300.0 Fraction  
 Batch 815951 Dilution 2  
 Date 01/22/2022 7:52 PM Analyst GJB

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	2.4	mg/L	2.0	C
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	ND	mg/L	1.0	C,ND
Sulfate	SO4	ND	mg/L	2.0	C,ND

**Wet Chemistry (General)  
 EPA 410.4**

**Prep**

Method N/A Container 3223592008-A(Sulfuric Acid)  
 Batch N/A Aliquot 2 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 410.4 Fraction  
 Batch 818974 Dilution 1  
 Date 02/11/2022 6:10 PM Analyst ALK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	ND	mg/L	15	C,ND



Client Sample ID	Field Blank	Collected	01/21/2022 2:49 PM
Lab Sample ID	3223592008	Lab Receipt	01/21/2022 5:02 PM

**Wet Chemistry (General)**  
**SW846 9050A**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592008-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SW846 9050A	<u>Fraction</u>	
<u>Batch</u>	815197	<u>Dilution</u>	1
<u>Date</u>	01/25/2022 3:55 PM	<u>Analyst</u>	JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	2	umhos/cm	1	C

**Wet Chemistry (General)**  
**SW846 9060A**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592008-E(Hydrochloric Acid)
<u>Batch</u>	N/A	<u>Aliquot</u>	6 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SW846 9060A	<u>Fraction</u>	
<u>Batch</u>	815555	<u>Dilution</u>	1
<u>Date</u>	01/26/2022 6:06 PM	<u>Analyst</u>	PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	ND	mg/L	0.50	C,ND

**Wet Chemistry (General)**  
**SW846 9066**

**Prep**

<u>Method</u>	420.4/9066	<u>Container</u>	3223592008-G(Sulfuric Acid)
<u>Batch</u>	814878	<u>Aliquot</u>	100 mL
<u>Date</u>	01/28/2022 9:03 AM	<u>Tech.</u>	AKH

**Analysis**

<u>Method</u>	SW846 9066	<u>Fraction</u>	
<u>Batch</u>	815975	<u>Dilution</u>	1
<u>Date</u>	01/28/2022 2:57 PM	<u>Analyst</u>	AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C,ND

**Wet Chemistry (General)**  
**ASTM D6919-09**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223592008-A(Sulfuric Acid)
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	ASTM D6919-09	<u>Fraction</u>	
<u>Batch</u>	817871	<u>Dilution</u>	1
<u>Date</u>	02/07/2022 2:05 PM	<u>Analyst</u>	JXL



Client Sample ID	<b>Field Blank</b>	Collected	<b>01/21/2022 2:49 PM</b>
Lab Sample ID	<b>3223592008</b>	Lab Receipt	<b>01/21/2022 5:02 PM</b>

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	ND	mg/L	0.100	C,ND

**Wet Chemistry (General)  
SM2130B-2011**

Prep		Analysis			
<u>Method</u>	N/A	<u>Method</u>	SM2130B-2011	<u>Fraction</u>	
<u>Batch</u>	N/A	<u>Batch</u>	814710	<u>Dilution</u>	1
<u>Date</u>	N/A	<u>Date</u>	01/22/2021 7:35 AM	<u>Analyst</u>	LXZ
<u>Container</u>	3223592008-B(Unpreserved)	<u>Aliquot</u>	25 mL		
<u>Tech.</u>	N/A				

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	0.12	NTU	0.10	C

**Wet Chemistry (General)  
SM2320B-2011**

Prep		Analysis			
<u>Method</u>	N/A	<u>Method</u>	SM2320B-2011	<u>Fraction</u>	
<u>Batch</u>	N/A	<u>Batch</u>	814791	<u>Dilution</u>	1
<u>Date</u>	N/A	<u>Date</u>	01/24/2022 9:11 PM	<u>Analyst</u>	MLW
<u>Container</u>	3223592008-B(Unpreserved)	<u>Aliquot</u>	50 mL		
<u>Tech.</u>	N/A				

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	ND	mg/L	5	C,ND

**Wet Chemistry (General)  
SM2320B-2011**

Prep		Analysis			
<u>Method</u>	N/A	<u>Method</u>	SM2320B-2011	<u>Fraction</u>	
<u>Batch</u>	N/A	<u>Batch</u>	814791	<u>Dilution</u>	1
<u>Date</u>	N/A	<u>Date</u>	01/24/2022 9:11 PM	<u>Analyst</u>	MLW
<u>Container</u>	3223592008-B(Unpreserved)	<u>Aliquot</u>	50 mL		
<u>Tech.</u>	N/A				

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	ND	mg/L	5	C,ND,1

**Wet Chemistry (General)  
S4500HB-11**



Client Sample ID **Field Blank** Collected **01/21/2022 2:49 PM**  
Lab Sample ID **3223592008** Lab Receipt **01/21/2022 5:02 PM**

**Prep**

Method N/A Container 3223592008-B(Unpreserved)  
Batch N/A Aliquot 50 mL  
Date N/A Tech. N/A

**Analysis**

Method S4500HB-11 Fraction  
Batch 814791 Dilution 1  
Date 01/24/2022 9:11 PM Analyst MLW

**RESULTS**

<u>Compound</u>	<u>CAS No</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
pH	PH	5.81	pH_Units		C,3



### Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3223592001	CWMP002W	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
SW846 9066	420.4/9066			
3223592002	CWMP004W	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
SW846 9066	420.4/9066			
3223592003	CWMP003W	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
SW846 9066	420.4/9066			
3223592004	CWMP018S	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
SW846 9066	420.4/9066			





Project 1st QTR 2022 GWMP-FORM 19Q  
 Workorder 3223592

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3223592005	CWMP017S	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	420.4/9066	
3223592006	CWMP012W	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	420.4/9066	
3223592007	Trip Blank	SW846 8260B	N/A	
3223592008	Field Blank	SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
SW846 9060A	N/A			
SW846 9066	420.4/9066			



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Client Name: Lancaster County Solid Waste MA  
Address: 1299 Harrisburg Pike, P.O. Box 4424  
Lancaster, PA 17604

Contact: Dan Brown  
Phone#: (717) 735-0193

Project Name#: Creswell/GWMP Form 19Q Wells  
Bill To: Lancaster County Solid Waste MA

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

Date Required: \_\_\_\_\_ Approved By: \_\_\_\_\_  
Email?  Y  N dbrown@lcswwma.org  
Fax?  Y  N No.: (717) 397-9973

# CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

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

Container Type	AG	AN	CG	PL	PL	PL
Container Size	40 ml	125 ml	40 ml	250 ml	125 ml	500 ml
Preservative	HCl	H2SO4	HCl	H2SO4	HNO3	None

## ANALYSES/METHOD REQUESTED

Field Measurements	8260 VOCs - Form 19Q	Sample Depth for AUX Data	NH3-N, COD	Total Metals: Ca, Fe, Mn, Mg, K, Na	PH, NO3, Cl, F, SPC, SO4, Turb,	Alkalinity, HCO3
TOC	2	1	1	1	1	1
O-OH	2	1	1	1	1	1
Matrix	2	1	1	1	1	1

Enter Number of Containers Per Sample or Field Results Below.

*G or C	*Matrix	Date	Time
1. CWMP002W	G GW	01/21/22	1121
2. CWMP004W	G GW	01/21/22	1152
3. CWMP003W	G GW	01/21/22	1205
4. CWMP018S	G GW	01/21/22	1255
5. CWMP017S	G GW	01/21/22	1310
6. CWMP012W	G GW	01/21/22	1405
7. Field Blank	G GW	01/21/22	1449
8. Trip Blank	G GW	01/21/22	1702
9			
10			

Project Comments:

LOGGED BY (signature):  
REVIEWED BY (signature):

Reinforced By / Company Name	Date	Time	Received By / Company Name	Date	Time
1. <i>[Signature]</i>	01/21/22	1702	<i>[Signature]</i>	01/21/22	1702
3					
5					
43					
9					

\* 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 ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

Rev 8/04



COC #: 3223592  
ALS QI

1 of 1

Cooler Temp: 1 Therm ID: 515

No. of Coolers: Y N Initial

Custody Seals Present? (if present) Seals Intact? Received on Ice? COC Labels Complete/Accurate? Cont. in Good Cond.? Correct Containers? Correct Sample Volumes? Correct Preservation?

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

Standard CLP-like USACE Reportable to PADEP? Yes PWSID # EDDS: Format Type-

Special Processing USACE Navy Sample Disposal Lab Special State Samples Collected In NY NJ PA NC

Deliverables Data

cup Labor Equipment

Signature: *[Signature]*

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

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Y N NA

Y N NA

Y N NA

Y N NA

Y N NA

Y N NA



301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | [www.alsglobal.com](http://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 **Lancaster County Solid Waste Authority**  
Project 1st QTR 2022 GWMP-FORM 19Q  
Workorder 3222895  
Report ID 148504 on 2/10/2022

## Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jan 18, 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 Susan Scherer (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](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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

**Recipient(s):**

Ashley Gichuki - Lancaster County Solid Waste Authority  
Daniel Brown - Lancaster County Solid Waste Authority  
Jordan Gallagher - Lancaster County Solid Waste Authority  
Jeff Musser - Lancaster County Solid Waste

*Susan Scherer*

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

**Susan Scherer**  
Project Coordinator

(ALS Digital Signature)



## Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3222895001	CWMP007W	Ground Water	01/18/2022 10:50 AM	01/18/2022 4:03 PM	BGS	Analytical Laboratory Service
3222895002	CWMP001W	Ground Water	01/18/2022 12:09 PM	01/18/2022 4:03 PM	BGS	Analytical Laboratory Service
3222895003	CWMP005W	Ground Water	01/18/2022 1:36 PM	01/18/2022 4:03 PM	BGS	Analytical Laboratory Service

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## Reference

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### 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 performed 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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### 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

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**Project Notations**

**Sample Notations**

**Lab ID**      **Sample ID**

**Result Notations**

Notation #	
0	Result reported exceeds instrument calibration
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	The QC sample type MB for method EPA 300.0 was outside the control limits for the analyte Chloride. The concentration was reported at 1.12mg/L and the control limit is less than 0.44mg/L.
3	The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.
4	The QC sample type MB for method EPA 300.0 was outside the control limits for the analyte Chloride. The concentration was reported at 1.42mg/L and the control limit is less than 0.44mg/L.



Client Sample ID **CWMP007W**  
 Lab Sample ID **3222895001**

Collected **01/18/2022 10:50 AM**  
 Lab Receipt **01/18/2022 4:03 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A                      Container 3222895001-G(Hydrochloric Acid)  
Batch N/A                        Aliquot 5 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 8260B                      Fraction VOA\_Trace  
Batch 815265                                 Dilution 1  
Date 01/26/2022 12:13 AM                Analyst PDK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	90.90 %	62 - 133	
4-Bromofluorobenzene	460-00-4	102 %	79 - 114	
Dibromofluoromethane	1868-53-7	91 %	78 - 116	
Toluene-d8	2037-26-5	93.10 %	76 - 127	

**Metals Analytical**  
**SW846 6010C**

**Prep**

Method SW846 3015                      Container 3222895001-I1(Nitric Acid)  
Batch 815246                                Aliquot 45 mL  
Date 01/25/2022 8:23 PM                Tech. SXC

**Analysis**

Method SW846 6010C                      Fraction ICP\_AES  
Batch 815479                                 Dilution 1  
Date 01/26/2022 1:25 PM                Analyst SRT

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	19.3	mg/L	0.11	C
Iron, Total	7439-89-6	ND	mg/L	0.067	C,ND
Magnesium, Total	7439-95-4	10.1	mg/L	0.11	C
Manganese, Total	7439-96-5	0.0073	mg/L	0.0056	C



Client Sample ID	<b>CWMP007W</b>	Collected	<b>01/18/2022 10:50 AM</b>
Lab Sample ID	<b>3222895001</b>	Lab Receipt	<b>01/18/2022 4:03 PM</b>

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	2.4	mg/L	0.56	C
Sodium, Total	7440-23-5	34.3	mg/L	0.56	C

**Wet Chemistry (General)  
S2540C-11**

Prep		Analysis			
Method	N/A	Method	S2540C-11	Fraction	
Batch	N/A	Batch	813817	Dilution	1
Date	N/A	Date	01/20/2022 12:24 PM	Analyst	SMS
Container	3222895001-B(Unpreserved)	Aliquot			
Tech.	N/A				

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	272	mg/L	25	C

**Wet Chemistry (General)  
EPA 300.0**

Prep		Analysis			
Method	N/A	Method	EPA 300.0	Fraction	
Batch	N/A	Batch	814747	Dilution	2
Date	N/A	Date	01/19/2022 12:28 PM	Analyst	GJB
Container	3222895001-B(Unpreserved)	Aliquot	5 mL		
Tech.	N/A				

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	10.0	mg/L	1.0	C,0
Sulfate	SO4	16.2	mg/L	2.0	C

Prep		Analysis			
Method	N/A	Method	EPA 300.0	Fraction	
Batch	N/A	Batch	816142	Dilution	25
Date	N/A	Date	01/29/2022 8:08 AM	Analyst	MSA
Container	3222895001-B(Unpreserved)	Aliquot	5 mL		
Tech.	N/A				

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	84.0	mg/L	25.0	C,2

**Wet Chemistry (General)  
EPA 410.4**





Client Sample ID **CWMP007W**  
 Lab Sample ID **3222895001**

Collected **01/18/2022 10:50 AM**  
 Lab Receipt **01/18/2022 4:03 PM**

**Prep**

Method N/A      Container 3222895001-A(Sulfuric Acid)  
Batch N/A      Aliquot 2 mL  
Date N/A      Tech. N/A

**Analysis**

Method EPA 410.4      Fraction  
Batch 817957      Dilution 1  
Date 02/04/2022 11:40 PM      Analyst NJA

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	ND	mg/L	15	C,ND

**Wet Chemistry (General)  
 SW846 9050A**

**Prep**

Method N/A      Container 3222895001-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 9050A      Fraction  
Batch 814645      Dilution 1  
Date 01/21/2022 5:00 PM      Analyst JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	446	umhos/cm	1	C

**Wet Chemistry (General)  
 SW846 9060A**

**Prep**

Method N/A      Container 3222895001-D(Hydrochloric Acid)  
Batch N/A      Aliquot 6 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 9060A      Fraction  
Batch 814246      Dilution 1  
Date 01/20/2022 2:19 PM      Analyst PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	ND	mg/L	0.50	C,ND

**Wet Chemistry (General)  
 SW846 9066**

**Prep**

Method 420.4/9066      Container 3222895001-F(Sulfuric Acid)  
Batch 814877      Aliquot 100 mL  
Date 01/28/2022 9:02 AM      Tech. AKH

**Analysis**

Method SW846 9066      Fraction  
Batch 815975      Dilution 1  
Date 01/28/2022 11:20 AM      Analyst AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C,ND



Client Sample ID **CWMP007W**  
 Lab Sample ID **3222895001**

Collected **01/18/2022 10:50 AM**  
 Lab Receipt **01/18/2022 4:03 PM**

**Wet Chemistry (General)**  
**ASTM D6919-09**

**Prep**

Method N/A      Container 3222895001-A(Sulfuric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method ASTM D6919-09      Fraction  
Batch 817735      Dilution 10  
Date 02/04/2022 6:54 PM      Analyst JXL

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	ND	mg/L	0.100	C,ND

**Wet Chemistry (General)**  
**SM2130B-2011**

**Prep**

Method N/A      Container 3222895001-B(Unpreserved)  
Batch N/A      Aliquot 25 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2130B-2011      Fraction  
Batch 813835      Dilution 1  
Date 01/19/2022 2:06 PM      Analyst BXD

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	0.21	NTU	0.10	c

**Wet Chemistry (General)**  
**SM2320B-2011**

**Prep**

Method N/A      Container 3222895001-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814552      Dilution 1  
Date 01/21/2022 4:59 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	12	mg/L	5	c

**Wet Chemistry (General)**  
**SM2320B-2011**

**Prep**

Method N/A      Container 3222895001-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814552      Dilution 1  
Date 01/21/2022 4:59 PM      Analyst MLW



Client Sample ID **CWMP007W**  
 Lab Sample ID **3222895001**

Collected **01/18/2022 10:50 AM**  
 Lab Receipt **01/18/2022 4:03 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	12	mg/L	5	C,1

**Wet Chemistry (General)  
 S4500HB-11**

**Prep**

Method N/A      Container 3222895001-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method S4500HB-11      Fraction  
Batch 814552      Dilution 1  
Date 01/21/2022 4:59 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	5.89	pH_Units		C,3

**FLD  
 Field**

**Prep**

Method N/A      Container 3222895001-C(Unpreserved)  
Batch N/A      Aliquot  
Date N/A      Tech. N/A

**Analysis**

Method Field      Fraction  
Batch 816408      Dilution 1  
Date 01/18/2022 10:50 AM      Analyst BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Depth to Water Level	DWL	6.37	Feet		C
Dissolved Oxygen	DO	5.50	mg/L	0.01	C
Elev Top MW Casing above MSL	781	453.40	Feet		C
Flow Rate	FRATE	1.49	gal/min		C
Ground Water Elevation	GWE	447.03	ft/MSL		C
Oxidation-Reduction Potential	ORP	297	mV		C
pH, Field (SM4500B)	PHF	4.93	pH_Units		C
Sample Depth	SD	33.00	Feet		C
Specific Conductance, Field	CONDf	566	umhos/cm	1	C
Temperature	Temp	13.30	Deg. C		C
Total Well Depth	TWD	36.50	Feet		C
Turbidity, Field	TURBF	ND	NTU	1	C,ND
Volume in Water Column	VWC	44.29	Gallons		C
Water Level After Purge	LAP	6.99	Feet		C
Well Volumes Purged	WVP	2.36	Vol		C



Client Sample ID **CWMP001W**  
 Lab Sample ID **3222895002**

Collected **01/18/2022 12:09 PM**  
 Lab Receipt **01/18/2022 4:03 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A                      Container 3222895002-G(Hydrochloric Acid)  
Batch N/A                        Aliquot 5 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 8260B                      Fraction VOA\_Trace  
Batch 815265                                Dilution 1  
Date 01/26/2022 12:36 AM                Analyst PDK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.50 %	62 - 133	
4-Bromofluorobenzene	460-00-4	107 %	79 - 114	
Dibromofluoromethane	1868-53-7	93.50 %	78 - 116	
Toluene-d8	2037-26-5	96.10 %	76 - 127	

**Metals Analytical**  
**SW846 6010C**

**Prep**

Method SW846 3015                      Container 3222895002-II(Nitric Acid)  
Batch 815246                                Aliquot 45 mL  
Date 01/25/2022 8:23 PM                Tech. SXC

**Analysis**

Method SW846 6010C                      Fraction ICP\_AES  
Batch 815479                                Dilution 1  
Date 01/26/2022 1:29 PM                Analyst SRT

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	14.9	mg/L	0.11	C
Iron, Total	7439-89-6	0.32	mg/L	0.067	C
Magnesium, Total	7439-95-4	10.4	mg/L	0.11	C
Manganese, Total	7439-96-5	0.050	mg/L	0.0056	C



Client Sample ID **CWMP001W**  
 Lab Sample ID **3222895002**

Collected **01/18/2022 12:09 PM**  
 Lab Receipt **01/18/2022 4:03 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	2.3	mg/L	0.56	C
Sodium, Total	7440-23-5	13.0	mg/L	0.56	C

**Wet Chemistry (General)  
 S2540C-11**

**Prep**

Method N/A Container 3222895002-B(Unpreserved)  
 Batch N/A Aliquot  
 Date N/A Tech. N/A

**Analysis**

Method S2540C-11 Fraction  
 Batch 813817 Dilution 1  
 Date 01/20/2022 12:24 PM Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	210	mg/L	25	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

Method N/A Container 3222895002-B(Unpreserved)  
 Batch N/A Aliquot 5 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 300.0 Fraction  
 Batch 814747 Dilution 2  
 Date 01/19/2022 11:22 AM Analyst GJB

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Fluoride	F	ND	mg/L	0.20	C,ND
Sulfate	SO4	3.8	mg/L	2.0	C

**Prep**

Method N/A Container 3222895002-B(Unpreserved)  
 Batch N/A Aliquot 5 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 300.0 Fraction  
 Batch 816142 Dilution 25  
 Date 01/29/2022 8:25 AM Analyst MSA

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	46.3	mg/L	25.0	C,2
Nitrate-N	NO3	17.3	mg/L	12.5	C

**Wet Chemistry (General)  
 EPA 410.4**



Client Sample ID **CWMP001W**  
 Lab Sample ID **3222895002**

Collected **01/18/2022 12:09 PM**  
 Lab Receipt **01/18/2022 4:03 PM**

**Prep**

Method N/A      Container 3222895002-A(Sulfuric Acid)  
Batch N/A      Aliquot 2 mL  
Date N/A      Tech. N/A

**Analysis**

Method EPA 410.4      Fraction  
Batch 817957      Dilution 1  
Date 02/04/2022 11:40 PM      Analyst NJA

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	ND	mg/L	15	C,ND

**Wet Chemistry (General)  
 SW846 9050A**

**Prep**

Method N/A      Container 3222895002-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 9050A      Fraction  
Batch 814645      Dilution 1  
Date 01/21/2022 5:00 PM      Analyst JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	279	umhos/cm	1	C

**Wet Chemistry (General)  
 SW846 9060A**

**Prep**

Method N/A      Container 3222895002-D(Hydrochloric Acid)  
Batch N/A      Aliquot 6 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 9060A      Fraction  
Batch 814246      Dilution 1  
Date 01/20/2022 2:19 PM      Analyst PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	ND	mg/L	0.50	C,ND

**Wet Chemistry (General)  
 SW846 9066**

**Prep**

Method 420.4/9066      Container 3222895002-F(Sulfuric Acid)  
Batch 814877      Aliquot 100 mL  
Date 01/28/2022 9:02 AM      Tech. AKH

**Analysis**

Method SW846 9066      Fraction  
Batch 815975      Dilution 1  
Date 01/28/2022 11:30 AM      Analyst AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C,ND



Client Sample ID **CWMP001W**  
 Lab Sample ID **3222895002**

Collected **01/18/2022 12:09 PM**  
 Lab Receipt **01/18/2022 4:03 PM**

**Wet Chemistry (General)**  
**ASTM D6919-09**

**Prep**

Method N/A      Container 3222895002-A(Sulfuric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method ASTM D6919-09      Fraction  
Batch 817735      Dilution 10  
Date 02/04/2022 7:08 PM      Analyst JXL

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	ND	mg/L	0.100	C,ND

**Wet Chemistry (General)**  
**SM2130B-2011**

**Prep**

Method N/A      Container 3222895002-B(Unpreserved)  
Batch N/A      Aliquot 25 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2130B-2011      Fraction  
Batch 813835      Dilution 1  
Date 01/19/2022 2:06 PM      Analyst BXD

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	15.3	NTU	0.10	C

**Wet Chemistry (General)**  
**SM2320B-2011**

**Prep**

Method N/A      Container 3222895002-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814552      Dilution 1  
Date 01/21/2022 4:59 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	ND	mg/L	5	C,ND

**Wet Chemistry (General)**  
**SM2320B-2011**

**Prep**

Method N/A      Container 3222895002-B(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814552      Dilution 1  
Date 01/21/2022 4:59 PM      Analyst MLW



Client Sample ID **CWMP001W**  
 Lab Sample ID **3222895002**

Collected **01/18/2022 12:09 PM**  
 Lab Receipt **01/18/2022 4:03 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	ND	mg/L	5	C,ND,1

**Wet Chemistry (General)  
 S4500HB-11**

**Prep**

Method N/A                      Container 3222895002-B(Unpreserved)  
Batch N/A                        Aliquot 50 mL  
Date N/A                         Tech. N/A

**Analysis**

Method S4500HB-11                      Fraction  
Batch 814552                                Dilution 1  
Date 01/21/2022 4:59 PM                      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	5.82	pH_Units		C,3

**FLD  
 Field**

**Prep**

Method N/A                      Container 3222895002-C(Unpreserved)  
Batch N/A                        Aliquot  
Date N/A                         Tech. N/A

**Analysis**

Method Field                                Fraction  
Batch 816408                                Dilution 1  
Date 01/18/2022 12:09 PM                      Analyst BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Depth to Water Level	DWL	28.46	Feet		C
Dissolved Oxygen	DO	8.82	mg/L	0.01	C
Elev Top MW Casing above MSL	781	515.13	Feet		C
Flow Rate	FRATE	1.60	gal/min		C
Ground Water Elevation	GWE	486.67	ft/MSL		C
Oxidation-Reduction Potential	ORP	270	mV		C
pH, Field (SM4500B)	PHF	5.28	pH_Units		C
Sample Depth	SD	57.00	Feet		C
Specific Conductance, Field	CONDf	382	umhos/cm	1	C
Temperature	Temp	13.14	Deg. C		C
Total Well Depth	TWD	66.30	Feet		C
Turbidity, Field	TURBF	17	NTU	1	C
Volume in Water Column	VWC	55.62	Gallons		C
Water Level After Purge	LAP	48.82	Feet		C
Well Volumes Purged	WVP	1.73	Vol		C





Client Sample ID **CWMP005W**  
 Lab Sample ID **3222895003**

Collected **01/18/2022 1:36 PM**  
 Lab Receipt **01/18/2022 4:03 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A      Container 3222895003-G(Hydrochloric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method SW846 8260B      Fraction VOA\_Trace  
Batch 815265      Dilution 1  
Date 01/26/2022 12:58 AM      Analyst PDK

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	92.20 %	62 - 133	
4-Bromofluorobenzene	460-00-4	104 %	79 - 114	
Dibromofluoromethane	1868-53-7	92.60 %	78 - 116	
Toluene-d8	2037-26-5	96.10 %	76 - 127	

**Metals Analytical**  
**SW846 6010C**

**Prep**

Method SW846 3015      Container 3222895003-II(Nitric Acid)  
Batch 815246      Aliquot 45 mL  
Date 01/25/2022 8:23 PM      Tech. SXC

**Analysis**

Method SW846 6010C      Fraction ICP\_AES  
Batch 815479      Dilution 1  
Date 01/26/2022 1:32 PM      Analyst SRT

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	13.8	mg/L	0.11	C
Iron, Total	7439-89-6	0.15	mg/L	0.067	C
Magnesium, Total	7439-95-4	7.3	mg/L	0.11	C
Manganese, Total	7439-96-5	0.051	mg/L	0.0056	C



Client Sample ID **CWMP005W**  
 Lab Sample ID **3222895003**

Collected **01/18/2022 1:36 PM**  
 Lab Receipt **01/18/2022 4:03 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	2.0	mg/L	0.56	C
Sodium, Total	7440-23-5	30.2	mg/L	0.56	C

**Wet Chemistry (General)  
 S2540C-11**

**Prep**

Method N/A Container 3222895003-B(Unpreserved)  
 Batch N/A Aliquot  
 Date N/A Tech. N/A

**Analysis**

Method S2540C-11 Fraction  
 Batch 813817 Dilution 1  
 Date 01/20/2022 12:24 PM Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	226	mg/L	25	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

Method N/A Container 3222895003-B(Unpreserved)  
 Batch N/A Aliquot 5 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 300.0 Fraction  
 Batch 814747 Dilution 2  
 Date 01/19/2022 11:55 AM Analyst GJB

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	59.8	mg/L	2.0	C,4
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	7.7	mg/L	1.0	C
Sulfate	SO4	5.8	mg/L	2.0	C

**Wet Chemistry (General)  
 EPA 410.4**

**Prep**

Method N/A Container 3222895003-A(Sulfuric Acid)  
 Batch N/A Aliquot 2 mL  
 Date N/A Tech. N/A

**Analysis**

Method EPA 410.4 Fraction  
 Batch 817957 Dilution 1  
 Date 02/04/2022 11:40 PM Analyst NJA

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	ND	mg/L	15	C,ND



Client Sample ID	<b>CWMP005W</b>	Collected	<b>01/18/2022 1:36 PM</b>
Lab Sample ID	<b>3222895003</b>	Lab Receipt	<b>01/18/2022 4:03 PM</b>

**Wet Chemistry (General)**  
**SW846 9050A**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	SW846 9050A
<u>Batch</u>	N/A	<u>Batch</u>	814645
<u>Date</u>	N/A	<u>Date</u>	01/21/2022 5:00 PM
<u>Container</u>	3222895003-B(Unpreserved)	<u>Fraction</u>	
<u>Aliquot</u>	50 mL	<u>Dilution</u>	1
<u>Tech.</u>	N/A	<u>Analyst</u>	JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	335	umhos/cm	1	c

**Wet Chemistry (General)**  
**SW846 9060A**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	SW846 9060A
<u>Batch</u>	N/A	<u>Batch</u>	814246
<u>Date</u>	N/A	<u>Date</u>	01/20/2022 2:19 PM
<u>Container</u>	3222895003-D(Hydrochloric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	6 mL	<u>Dilution</u>	1
<u>Tech.</u>	N/A	<u>Analyst</u>	PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	ND	mg/L	0.50	C.ND

**Wet Chemistry (General)**  
**SW846 9066**

Prep		Analysis	
<u>Method</u>	420.4/9066	<u>Method</u>	SW846 9066
<u>Batch</u>	814877	<u>Batch</u>	815975
<u>Date</u>	01/28/2022 9:02 AM	<u>Date</u>	01/28/2022 11:34 AM
<u>Container</u>	3222895003-F(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	100 mL	<u>Dilution</u>	1
<u>Tech.</u>	AKH	<u>Analyst</u>	AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C.ND

**Wet Chemistry (General)**  
**ASTM D6919-09**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	ASTM D6919-09
<u>Batch</u>	N/A	<u>Batch</u>	817735
<u>Date</u>	N/A	<u>Date</u>	02/04/2022 7:22 PM
<u>Container</u>	3222895003-A(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	5 mL	<u>Dilution</u>	10
<u>Tech.</u>	N/A	<u>Analyst</u>	JXL



Client Sample ID	CWMP005W	Collected	01/18/2022 1:36 PM
Lab Sample ID	3222895003	Lab Receipt	01/18/2022 4:03 PM

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	ND	mg/L	0.100	C,ND

**Wet Chemistry (General)  
SM2130B-2011**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3222895003-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	25 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SM2130B-2011	<u>Fraction</u>	
<u>Batch</u>	813835	<u>Dilution</u>	1
<u>Date</u>	01/19/2022 2:06 PM	<u>Analyst</u>	BXD

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	5.57	NTU	0.10	C

**Wet Chemistry (General)  
SM2320B-2011**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3222895003-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SM2320B-2011	<u>Fraction</u>	
<u>Batch</u>	814552	<u>Dilution</u>	1
<u>Date</u>	01/21/2022 4:59 PM	<u>Analyst</u>	MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	15	mg/L	5	C

**Wet Chemistry (General)  
SM2320B-2011**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3222895003-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	SM2320B-2011	<u>Fraction</u>	
<u>Batch</u>	814552	<u>Dilution</u>	1
<u>Date</u>	01/21/2022 4:59 PM	<u>Analyst</u>	MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	15	mg/L	5	C,1

**Wet Chemistry (General)  
S4500HB-11**



Client Sample ID **CWMP005W**  
 Lab Sample ID **3222895003**

Collected **01/18/2022 1:36 PM**  
 Lab Receipt **01/18/2022 4:03 PM**

**Prep**

Method N/A                      Container 3222895003-B(Unpreserved)  
Batch N/A                        Aliquot 50 mL  
Date N/A                         Tech. N/A

**Analysis**

Method S4500HB-11                      Fraction  
Batch 814552                                Dilution 1  
Date 01/21/2022 4:59 PM                      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	6.24	pH_Units		C,3

**FLD  
Field**

**Prep**

Method N/A                      Container 3222895003-C(Unpreserved)  
Batch N/A                        Aliquot  
Date N/A                         Tech. N/A

**Analysis**

Method Field                                Fraction  
Batch 816408                                Dilution 1  
Date 01/18/2022 1:36 PM                      Analyst BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Depth to Water Level	DWL	43.94	Feet		C
Dissolved Oxygen	DO	6.78	mg/L	0.01	C
Elev Top MW Casing above MSL	781	513.43	Feet		C
Flow Rate	FRATE	2.91	gal/min		C
Ground Water Elevation	GWE	469.49	ft/MSL		C
Oxidation-Reduction Potential	ORP	264	mV		C
pH, Field (SM4500B)	PHF	5.08	pH_Units		C
Sample Depth	SD	130.00	Feet		C
Specific Conductance, Field	CONDf	466	umhos/cm	1	C
Temperature	Temp	12.90	Deg. C		C
Total Well Depth	TWD	138.92	Feet		C
Turbidity, Field	TURBF	7	NTU	1	C
Volume in Water Column	VWC	139.62	Gallons		C
Water Level After Purge	LAP	46.62	Feet		C
Well Volumes Purged	WVP	1.46	Vol		C



### Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3222895001	CWMP007W	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	420.4/9066	
3222895002	CWMP001W	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	420.4/9066	
3222895003	CWMP005W	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	420.4/9066	



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301 Filling Mill Road • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

**Client Name:** Lancaster County Solid Waste MA  
**Address:** 1299 Harrisburg Pike, P.O. Box 4424  
Lancaster, PA 17604  
**Contact:** Dan Brown  
**Phone#:** (717) 735-0193  
**Project Name#:** Creswell/GWMP Form 19Q Wells  
**Bill To:** Lancaster County Solid Waste MA

**TAT**  Normal-Standard TAT is 10-12 business days.  
 Rush-Subject to ALS approval and surcharges.  
**Date Required:** \_\_\_\_\_ **Approved By:** \_\_\_\_\_  
**Email?**  Y  N **mreider@LCSWMA.com**  
**Fax?**  Y  N **No.: (717) 397-9973**

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time
1. CWMP007W	01/18/22	1050
2. CWMP001W	01/18/22	1209
3. CWMP005W	01/18/22	1336
4		
5		
6		
7		
8		
9		
10		

**Project Comments:**

LOGGED BY (signature):	DATE	TIME
REVIEWED BY (signature):		
<b>Relinquished By / Company Name</b>	<b>Date</b>	<b>Time</b>
<i>[Signature]</i> ALS	1-18-22	16:03
<b>Received By / Company Name</b>		
2 AMRF/ALS		
4		
6		
8		
10		

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

ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

### CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

Generated by ALS

COC #:

ALS Quote 3222895

Container Type	AG	AN	CG	PL	PL	PL	PL	PL	Recei.
Container Size	40 ml.	125 ml	40 ml	250 ml	125 ml	500 ml	500 ml	500 ml	
Preservative	HCl	H2SO4	HCl	H2SO4	HNO3	None	None	None	

ANALYSES/METHOD REQUESTED											
Enter Number of Containers Per Sample or Field Results Below.											
*G or C	*Matrix	TOC	O-H	8260 VOCs - Form 19Q	Field Measurements	Sample Depth for ALX Data	NH3-N, COD	Total Metals: Ca, Fe, Mn, Mg, K, Na	PH, NO3, Cl, F, SPC, SO4, Turb.	TDS	Alkalinity, HCO3
		2	1	2	X	X	1	1	1	1	1
		2	1	2	X	X	1	1	1	1	1
		2	1	2	X	X	1	1	1	1	1

Cooler Temp: 4 Therm ID: 575  
No. of Coc

Temp Taken By: AMRF  
WO Temp (°C): 4  
Therm ID: 575  
Receipt Info Completed By:  
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 NA  
Correct Containers Provided Y N NA  
Sample Label/COC Agree Y N NA  
Adequate Sample Volumes Y N NA  
VOA Headspace Present Y N NA  
Voa Trip Blank Y N NA  
NJS 4 Days? Y N NA  
Red Screen (uci) Y N NA  
Courier/Tracking #: Y N NA

COC/Lab Cc  
Courier/Tr: SH PU  
1192022102  
1192022103 1192022104

SDWA Compliance PWSID  
ALS Field Services:  Pickup  Labor  
 Composite\_Sampling  Rental\_Equipment  
 Other:

Standard	Special Processing	State Samples Collected in
<input type="checkbox"/> CLP-like	USACE <input type="checkbox"/>	NY <input type="checkbox"/>
<input type="checkbox"/> USACE	Navy <input type="checkbox"/>	NJ <input type="checkbox"/>
		PA <input checked="" type="checkbox"/>
		NC <input type="checkbox"/>

Deliverables	Reportable to PADEP?	Sample Disposal	PWSID #	EDDS: Format Type-
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/>	Lab <input checked="" type="checkbox"/>		
<input type="checkbox"/> No	<input type="checkbox"/>	Special <input type="checkbox"/>		





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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 **Lancaster County Solid Waste Authority**  
Project 1st QTR 2022 GWMP-FORM 19Q  
Workorder 3223372  
Report ID 149810 on 2/16/2022

## Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jan 20, 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 Susan Scherer (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](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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

**Recipient(s):**

Ashley Gichuki - Lancaster County Solid Waste Authority  
Daniel Brown - Lancaster County Solid Waste Authority  
Jordan Gallagher - Lancaster County Solid Waste Authority  
Jeff Musser - Lancaster County Solid Waste

*Susan Scherer*

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

**Susan Scherer**  
Project Coordinator

(ALS Digital Signature)





## Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3223372001	CWMP016W	Ground Water	01/20/2022 10:55 AM	01/20/2022 4:07 PM	BGS	Analytical Laboratory Service
3223372002	CWMP009W	Ground Water	01/20/2022 11:46 AM	01/20/2022 4:07 PM	BGS	Analytical Laboratory Service
3223372003	CWMP008W	Ground Water	01/20/2022 12:31 PM	01/20/2022 4:07 PM	BGS	Analytical Laboratory Service
3223372004	CWMP010W	Ground Water	01/20/2022 1:21 PM	01/20/2022 4:07 PM	BGS	Analytical Laboratory Service

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## Reference

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### 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 performed 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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### 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 #	
0	Result reported exceeds instrument calibration
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	The QC sample type LCS for method EPA 300.0 was outside the control limits for the analyte Chloride. The % Recovery was reported as 87.7 and the control limits were 90 to 110.
3	The QC sample type MB for method EPA 300.0 was outside the control limits for the analyte Chloride. The concentration was reported at 1.15mg/L and the control limit is less than 0.44mg/L.
4	Analyte was analyzed past the 48 hour holding time.
5	The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.
6	The QC sample type LCS for method EPA 300.0 was outside the control limits for the analyte Sulfate. The % Recovery was reported as 88.8 and the control limits were 90 to 110.



Client Sample ID **CWMP016W**  
 Lab Sample ID **3223372001**

Collected **01/20/2022 10:55 AM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A                      Container 3223372001-H(Hydrochloric Acid)  
Batch N/A                        Aliquot 5 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 8260B                      Fraction VOA\_Trace  
Batch 814790                                Dilution 1  
Date 01/24/2022 5:56 PM                Analyst DPC

**RESULTS**

<u>Compound</u>	<u>CAS No</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1,2,2-Tetrachloroethane	79-34-5	ND	ug/L	1.0	C,ND
1,1,2-Trichloroethane	79-00-5	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2,3-Trichloropropane	96-18-4	ND	ug/L	2.0	C,ND
1,2,4-Trichlorobenzene	120-82-1	ND	ug/L	2.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichlorobenzene	95-50-1	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
1,2-Dichloropropane	78-87-5	ND	ug/L	1.0	C,ND
1,3-Dichlorobenzene	541-73-1	ND	ug/L	1.0	C,ND
1,3-Dichloropropene, Total	542-75-6	ND	ug/L	2.0	C,ND
1,4-Dichlorobenzene	106-46-7	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
Bromodichloromethane	75-27-4	ND	ug/L	1.0	C,ND
Bromoform	75-25-2	ND	ug/L	1.0	C,ND
Bromomethane	74-83-9	ND	ug/L	1.0	C,ND
Carbon Tetrachloride	56-23-5	ND	ug/L	1.0	C,ND
Chlorobenzene	108-90-7	ND	ug/L	1.0	C,ND
Chlorodibromomethane	124-48-1	ND	ug/L	1.0	C,ND
Chloroethane	75-00-3	ND	ug/L	1.0	C,ND
Chloroform	67-66-3	ND	ug/L	1.0	C,ND
Chloromethane	74-87-3	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Styrene	100-42-5	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Trichlorofluoromethane	75-69-4	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND



Client Sample ID	<b>CWMP016W</b>	Collected	<b>01/20/2022 10:55 AM</b>
Lab Sample ID	<b>3223372001</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	94.70 %	62 - 133	
4-Bromofluorobenzene	460-00-4	105 %	79 - 114	
Dibromofluoromethane	1868-53-7	96.40 %	78 - 116	
Toluene-d8	2037-26-5	96.20 %	76 - 127	

**Metals Analytical  
 SW846 6020A**

**Prep**

<u>Method</u>	SW846 3015	<u>Container</u>	3223372001-J1(Nitric Acid)
<u>Batch</u>	815247	<u>Aliquot</u>	45 mL
<u>Date</u>	01/25/2022 8:23 PM	<u>Tech.</u>	SXC

**Analysis**

<u>Method</u>	SW846 6020A	<u>Fraction</u>	ICP_MS
<u>Batch</u>	815755	<u>Dilution</u>	1
<u>Date</u>	01/27/2022 3:17 PM	<u>Analyst</u>	MO

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	5.5	mg/L	0.11	C
Iron, Total	7439-89-6	0.40	mg/L	0.056	C
Magnesium, Total	7439-95-4	1.4	mg/L	0.11	C
Manganese, Total	7439-96-5	0.0087	mg/L	0.0056	C
Potassium, Total	7440-09-7	0.53	mg/L	0.11	C
Sodium, Total	7440-23-5	3.3	mg/L	0.11	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223372001-E(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	EPA 300.0	<u>Fraction</u>	
<u>Batch</u>	816142	<u>Dilution</u>	2
<u>Date</u>	01/29/2022 9:55 PM	<u>Analyst</u>	MSA

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	4.7	mg/L	2.0	C,2,3
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	2.6	mg/L	1.0	C,4
Sulfate	SO4	9.4	mg/L	2.0	C,6

**Wet Chemistry (General)  
 EPA 410.4**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223372001-D(Sulfuric Acid)
<u>Batch</u>	N/A	<u>Aliquot</u>	2 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	EPA 410.4	<u>Fraction</u>	
<u>Batch</u>	817957	<u>Dilution</u>	1
<u>Date</u>	02/04/2022 11:40 PM	<u>Analyst</u>	NJA



Client Sample ID	<b>CWMP016W</b>	Collected	<b>01/20/2022 10:55 AM</b>
Lab Sample ID	<b>3223372001</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	ND	mg/L	15	C.ND

**Wet Chemistry (General)  
EPA 420.4**

Prep		Analysis	
<u>Method</u>	420.4/9066	<u>Method</u>	EPA 420.4
<u>Batch</u>	814877	<u>Batch</u>	815975
<u>Date</u>	01/28/2022 9:02 AM	<u>Date</u>	01/28/2022 1:11 PM
<u>Container</u>	3223372001-C(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	100 mL	<u>Dilution</u>	1
<u>Tech.</u>	AKH	<u>Analyst</u>	AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C.ND

**Wet Chemistry (General)  
ASTM D6919-09**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	ASTM D6919-09
<u>Batch</u>	N/A	<u>Batch</u>	817739
<u>Date</u>	N/A	<u>Date</u>	02/05/2022 2:15 PM
<u>Container</u>	3223372001-D(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	5 mL	<u>Dilution</u>	10
<u>Tech.</u>	N/A	<u>Analyst</u>	JXL

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	0.131	mg/L	0.100	C

**Wet Chemistry (General)  
SM2130B-2011**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	SM2130B-2011
<u>Batch</u>	N/A	<u>Batch</u>	814532
<u>Date</u>	N/A	<u>Date</u>	01/21/2022 9:01 AM
<u>Container</u>	3223372001-E(Unpreserved)	<u>Fraction</u>	
<u>Aliquot</u>	25 mL	<u>Dilution</u>	1
<u>Tech.</u>	N/A	<u>Analyst</u>	BXD

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	4.17	NTU	0.10	C

**Wet Chemistry (General)  
SM2320B-2011**



Client Sample ID **CWMP016W**  
 Lab Sample ID **3223372001**

Collected **01/20/2022 10:55 AM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Prep**

Method N/A      Container 3223372001-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	8	mg/L	5	C

**Wet Chemistry (General)  
 SM2320B-2011**

**Prep**

Method N/A      Container 3223372001-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	8	mg/L	5	C,1

**Wet Chemistry (General)  
 SM2510B-2011**

**Prep**

Method N/A      Container 3223372001-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2510B-2011      Fraction  
Batch 815197      Dilution 1  
Date 01/25/2022 3:55 PM      Analyst JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	80	umhos/cm	1	C

**Wet Chemistry (General)  
 S2540C-11**

**Prep**

Method N/A      Container 3223372001-E(Unpreserved)  
Batch N/A      Aliquot  
Date N/A      Tech. N/A

**Analysis**

Method S2540C-11      Fraction  
Batch 815191      Dilution 1  
Date 01/28/2022 7:38 AM      Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	59	mg/L	25	C



Client Sample ID **CWMP016W**  
 Lab Sample ID **3223372001**

Collected **01/20/2022 10:55 AM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Wet Chemistry (General)**  
**S4500HB-11**

**Prep**

Method N/A Container 3223372001-E(Unpreserved)  
Batch N/A Aliquot 50 mL  
Date N/A Tech. N/A

**Analysis**

Method S4500HB-11 Fraction  
Batch 814791 Dilution 1  
Date 01/24/2022 9:11 PM Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	6.32	pH_Units		C.5

**Wet Chemistry (General)**  
**SM5310B-2011**

**Prep**

Method N/A Container 3223372001-A(Hydrochloric Acid)  
Batch N/A Aliquot 6 mL  
Date N/A Tech. N/A

**Analysis**

Method SM5310B-2011 Fraction  
Batch 815214 Dilution 1  
Date 01/25/2022 6:31 PM Analyst PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	ND	mg/L	0.50	C.ND

**FLD**  
**Field**

**Prep**

Method N/A Container 3223372001-G(Unpreserved)  
Batch N/A Aliquot  
Date N/A Tech. N/A

**Analysis**

Method Field Fraction  
Batch 816408 Dilution 1  
Date 01/20/2022 10:55 AM Analyst BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Depth to Water Level	DWL	10.26	Feet		C
Dissolved Oxygen	DO	8.77	mg/L	0.01	C
Elev Top MW Casing above MSL	781	311.97	Feet		C
Flow Rate	FRATE	2.11	gal/min		C
Ground Water Elevation	GWE	301.71	ft/MSL		C
Oxidation-Reduction Potential	ORP	272	mV		C
pH, Field (SM4500B)	PHF	5.10	pH_Units		C
Sample Depth	SD	71.00	Feet		C
Specific Conductance, Field	CONDf	94	umhos/cm	1	C
Temperature	Temp	12.37	Deg. C		C
Total Well Depth	TWD	73.52	Feet		C
Turbidity, Field	TURBF	2	NTU	1	C





Project 1st QTR 2022 GWMP-FORM 19Q  
Workorder 3223372

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Client Sample ID	<b>CWMP016W</b>	Collected	<b>01/20/2022 10:55 AM</b>
Lab Sample ID	<b>3223372001</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

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*RESULTS*

<u>Compound</u>	<u>CAS No</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
Volume in Water Column	VWC	92.99	Gallons		C
Water Level After Purge	LAP	20.38	Feet		C
Well Volumes Purged	WVP	2.15	Vol		C

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Client Sample ID **CWMP009W**  
 Lab Sample ID **3223372002**

Collected **01/20/2022 11:46 AM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A                      Container 3223372002-H(Hydrochloric Acid)  
Batch N/A                        Aliquot 5 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 8260B                      Fraction VOA\_Trace  
Batch 814790                                Dilution 1  
Date 01/24/2022 6:19 PM                      Analyst DPC

**RESULTS**

<u>Compound</u>	<u>CAS No</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1,2,2-Tetrachloroethane	79-34-5	ND	ug/L	1.0	C,ND
1,1,2-Trichloroethane	79-00-5	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	1.4	ug/L	1.0	C
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2,3-Trichloropropane	96-18-4	ND	ug/L	2.0	C,ND
1,2,4-Trichlorobenzene	120-82-1	ND	ug/L	2.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichlorobenzene	95-50-1	2.4	ug/L	1.0	C
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
1,2-Dichloropropane	78-87-5	ND	ug/L	1.0	C,ND
1,3-Dichlorobenzene	541-73-1	ND	ug/L	1.0	C,ND
1,3-Dichloropropene, Total	542-75-6	ND	ug/L	2.0	C,ND
1,4-Dichlorobenzene	106-46-7	10.7	ug/L	1.0	C
Benzene	71-43-2	2.2	ug/L	1.0	C
Bromodichloromethane	75-27-4	ND	ug/L	1.0	C,ND
Bromoform	75-25-2	ND	ug/L	1.0	C,ND
Bromomethane	74-83-9	ND	ug/L	1.0	C,ND
Carbon Tetrachloride	56-23-5	ND	ug/L	1.0	C,ND
Chlorobenzene	108-90-7	23.8	ug/L	1.0	C
Chlorodibromomethane	124-48-1	ND	ug/L	1.0	C,ND
Chloroethane	75-00-3	10.7	ug/L	1.0	C
Chloroform	67-66-3	ND	ug/L	1.0	C,ND
Chloromethane	74-87-3	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Styrene	100-42-5	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Trichlorofluoromethane	75-69-4	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND



Client Sample ID	<b>CWMP009W</b>	Collected	<b>01/20/2022 11:46 AM</b>
Lab Sample ID	<b>3223372002</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.30 %	62 - 133	
4-Bromofluorobenzene	460-00-4	104 %	79 - 114	
Dibromofluoromethane	1868-53-7	95.60 %	78 - 116	
Toluene-d8	2037-26-5	95.60 %	76 - 127	

**Metals Analytical  
 SW846 6020A**

**Prep**

<u>Method</u>	SW846 3015	<u>Container</u>	3223372002-J1(Nitric Acid)
<u>Batch</u>	815247	<u>Aliquot</u>	45 mL
<u>Date</u>	01/25/2022 8:23 PM	<u>Tech.</u>	SXC

**Analysis**

<u>Method</u>	SW846 6020A	<u>Fraction</u>	ICP_MS
<u>Batch</u>	815755	<u>Dilution</u>	1
<u>Date</u>	01/27/2022 3:20 PM	<u>Analyst</u>	MO

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	150	mg/L	0.11	C
Iron, Total	7439-89-6	36.5	mg/L	0.056	C
Magnesium, Total	7439-95-4	81.1	mg/L	0.11	C
Manganese, Total	7439-96-5	12.2	mg/L	0.0056	C
Potassium, Total	7440-09-7	33.0	mg/L	0.11	C
Sodium, Total	7440-23-5	183	mg/L	0.11	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223372002-E(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	EPA 300.0	<u>Fraction</u>	
<u>Batch</u>	816142	<u>Dilution</u>	2
<u>Date</u>	01/29/2022 10:12 PM	<u>Analyst</u>	MSA

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	ND	mg/L	1.0	C,ND,4
Sulfate	SO4	6.3	mg/L	2.0	C,6

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223372002-E(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	EPA 300.0	<u>Fraction</u>	
<u>Batch</u>	819271	<u>Dilution</u>	25
<u>Date</u>	02/13/2022 9:19 PM	<u>Analyst</u>	MID

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
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Client Sample ID	<b>CWMP009W</b>	Collected	<b>01/20/2022 11:46 AM</b>
Lab Sample ID	<b>3223372002</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	601	mg/L	25.0	C

**Wet Chemistry (General)  
 EPA 410.4**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	EPA 410.4
<u>Batch</u>	N/A	<u>Batch</u>	817957
<u>Date</u>	N/A	<u>Date</u>	02/04/2022 11:40 PM
<u>Container</u>	3223372002-D(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	2 mL	<u>Dilution</u>	1
<u>Tech.</u>	N/A	<u>Analyst</u>	NJA

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	119	mg/L	15	C

**Wet Chemistry (General)  
 EPA 420.4**

Prep		Analysis	
<u>Method</u>	420.4/9066	<u>Method</u>	EPA 420.4
<u>Batch</u>	814877	<u>Batch</u>	815975
<u>Date</u>	01/28/2022 9:02 AM	<u>Date</u>	01/28/2022 1:14 PM
<u>Container</u>	3223372002-C(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	100 mL	<u>Dilution</u>	1
<u>Tech.</u>	AKH	<u>Analyst</u>	AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C,ND

**Wet Chemistry (General)  
 ASTM D6919-09**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	ASTM D6919-09
<u>Batch</u>	N/A	<u>Batch</u>	817739
<u>Date</u>	N/A	<u>Date</u>	02/05/2022 2:29 PM
<u>Container</u>	3223372002-D(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	5 mL	<u>Dilution</u>	10
<u>Tech.</u>	N/A	<u>Analyst</u>	JXL

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	27.5	mg/L	0.100	C

**Wet Chemistry (General)  
 SM2130B-2011**



Client Sample ID **CWMP009W**  
 Lab Sample ID **3223372002**

Collected **01/20/2022 11:46 AM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Prep**

Method N/A      Container 3223372002-E(Unpreserved)  
Batch N/A      Aliquot 25 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2130B-2011      Fraction  
Batch 814532      Dilution 1  
Date 01/21/2022 9:01 AM      Analyst BXD

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	28.1	NTU	0.10	C

**Wet Chemistry (General)  
 SM2320B-2011**

**Prep**

Method N/A      Container 3223372002-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 815974      Dilution 10  
Date 01/28/2022 2:49 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	555	mg/L	50	C

**Wet Chemistry (General)  
 SM2320B-2011**

**Prep**

Method N/A      Container 3223372002-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 815974      Dilution 1  
Date 01/28/2022 2:49 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	555	mg/L	5	C,1

**Wet Chemistry (General)  
 SM2510B-2011**

**Prep**

Method N/A      Container 3223372002-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2510B-2011      Fraction  
Batch 815197      Dilution 10  
Date 01/25/2022 3:55 PM      Analyst JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	3030	umhos/cm	10	C



Client Sample ID **CWMP009W**  
 Lab Sample ID **3223372002**

Collected **01/20/2022 11:46 AM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Wet Chemistry (General)**  
**S2540C-11**

**Prep**

Method N/A      Container 3223372002-E(Unpreserved)  
Batch N/A      Aliquot  
Date N/A      Tech. N/A

**Analysis**

Method S2540C-11      Fraction  
Batch 815191      Dilution 1  
Date 01/28/2022 7:38 AM      Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	1580	mg/L	25	c

**Wet Chemistry (General)**  
**S4500HB-11**

**Prep**

Method N/A      Container 3223372002-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method S4500HB-11      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	6.70	pH_Units		c.5

**Wet Chemistry (General)**  
**SM5310B-2011**

**Prep**

Method N/A      Container 3223372002-A(Hydrochloric Acid)  
Batch N/A      Aliquot 6 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM5310B-2011      Fraction  
Batch 815214      Dilution 10  
Date 01/25/2022 6:31 PM      Analyst PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	35.2	mg/L	5.0	c

**FLD**  
**Field**

**Prep**

Method N/A      Container 3223372002-G(Unpreserved)  
Batch N/A      Aliquot  
Date N/A      Tech. N/A

**Analysis**

Method Field      Fraction  
Batch 816408      Dilution 1  
Date 01/20/2022 11:46 AM      Analyst BGS



Client Sample ID **CWMP009W**  
 Lab Sample ID **3223372002**

Collected **01/20/2022 11:46 AM**  
 Lab Receipt **01/20/2022 4:07 PM**

**RESULTS**

<u>Compound</u>	<u>CAS No</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
Depth to Water Level	DWL	8.70	Feet		C
Dissolved Oxygen	DO	0.15	mg/L	0.01	C
Elev Top MW Casing above MSL	781	404.20	Feet		C
Flow Rate	FRATE	0.94	gal/min		C
Ground Water Elevation	GWE	395.50	ft/MSL		C
Oxidation-Reduction Potential	ORP	-49	mV		C
pH, Field (SM4500B)	PHF	6.14	pH_Units		C
Sample Depth	SD	16.00	Feet		C
Specific Conductance, Field	CONDF	4040	umhos/cm	1	C
Temperature	Temp	11.36	Deg. C		C
Total Well Depth	TWD	19.70	Feet		C
Turbidity, Field	TURBF	2	NTU	1	C
Volume in Water Column	VWC	7.15	Gallons		C
Water Level After Purge	LAP	10.98	Feet		C
Well Volumes Purged	WVP	2.62	Vol		C



Client Sample ID **CWMP008W**  
 Lab Sample ID **3223372003**

Collected **01/20/2022 12:31 PM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A                      Container 3223372003-H(Hydrochloric Acid)  
Batch N/A                        Aliquot 5 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 8260B                      Fraction VOA\_Trace  
Batch 814790                                Dilution 1  
Date 01/24/2022 6:41 PM                      Analyst DPC

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1,2,2-Tetrachloroethane	79-34-5	ND	ug/L	1.0	C,ND
1,1,2-Trichloroethane	79-00-5	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	2.4	ug/L	1.0	C
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2,3-Trichloropropane	96-18-4	ND	ug/L	2.0	C,ND
1,2,4-Trichlorobenzene	120-82-1	ND	ug/L	2.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichlorobenzene	95-50-1	1.4	ug/L	1.0	C
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
1,2-Dichloropropane	78-87-5	ND	ug/L	1.0	C,ND
1,3-Dichlorobenzene	541-73-1	ND	ug/L	1.0	C,ND
1,3-Dichloropropene, Total	542-75-6	ND	ug/L	2.0	C,ND
1,4-Dichlorobenzene	106-46-7	10.9	ug/L	1.0	C
Benzene	71-43-2	ND	ug/L	1.0	C,ND
Bromodichloromethane	75-27-4	ND	ug/L	1.0	C,ND
Bromoform	75-25-2	ND	ug/L	1.0	C,ND
Bromomethane	74-83-9	ND	ug/L	1.0	C,ND
Carbon Tetrachloride	56-23-5	ND	ug/L	1.0	C,ND
Chlorobenzene	108-90-7	8.5	ug/L	1.0	C
Chlorodibromomethane	124-48-1	ND	ug/L	1.0	C,ND
Chloroethane	75-00-3	4.1	ug/L	1.0	C
Chloroform	67-66-3	ND	ug/L	1.0	C,ND
Chloromethane	74-87-3	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Styrene	100-42-5	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Trichlorofluoromethane	75-69-4	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND





Client Sample ID	<b>CWMP008W</b>	Collected	<b>01/20/2022 12:31 PM</b>
Lab Sample ID	<b>3223372003</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	91.90 %	62 - 133	
4-Bromofluorobenzene	460-00-4	105 %	79 - 114	
Dibromofluoromethane	1868-53-7	94 %	78 - 116	
Toluene-d8	2037-26-5	96.80 %	76 - 127	

**Metals Analytical  
 SW846 6020A**

**Prep**

<u>Method</u>	SW846 3015	<u>Container</u>	3223372003-J1(Nitric Acid)
<u>Batch</u>	815247	<u>Aliquot</u>	45 mL
<u>Date</u>	01/25/2022 8:23 PM	<u>Tech.</u>	SXC

**Analysis**

<u>Method</u>	SW846 6020A	<u>Fraction</u>	ICP_MS
<u>Batch</u>	815755	<u>Dilution</u>	1
<u>Date</u>	01/27/2022 3:24 PM	<u>Analyst</u>	MO

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	57.4	mg/L	0.11	C
Iron, Total	7439-89-6	24.1	mg/L	0.056	C
Magnesium, Total	7439-95-4	27.9	mg/L	0.11	C
Manganese, Total	7439-96-5	14.6	mg/L	0.0056	C
Potassium, Total	7440-09-7	7.6	mg/L	0.11	C
Sodium, Total	7440-23-5	33.4	mg/L	0.11	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223372003-E(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	EPA 300.0	<u>Fraction</u>	
<u>Batch</u>	816142	<u>Dilution</u>	2
<u>Date</u>	01/29/2022 10:29 PM	<u>Analyst</u>	MSA

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	32.9	mg/L	2.0	C,2,3
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	ND	mg/L	1.0	C,ND,4
Sulfate	SO4	7.2	mg/L	2.0	C,6

**Wet Chemistry (General)  
 EPA 410.4**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223372003-D(Sulfuric Acid)
<u>Batch</u>	N/A	<u>Aliquot</u>	2 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	EPA 410.4	<u>Fraction</u>	
<u>Batch</u>	817957	<u>Dilution</u>	1
<u>Date</u>	02/04/2022 11:40 PM	<u>Analyst</u>	NJA



Client Sample ID	<b>CWMP008W</b>	Collected	<b>01/20/2022 12:31 PM</b>
Lab Sample ID	<b>3223372003</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	27	mg/L	15	c

**Wet Chemistry (General)  
EPA 420.4**

Prep		Analysis	
<u>Method</u>	420.4/9066	<u>Method</u>	EPA 420.4
<u>Batch</u>	814877	<u>Batch</u>	815975
<u>Date</u>	01/28/2022 9:02 AM	<u>Date</u>	01/28/2022 1:17 PM
<u>Container</u>	3223372003-C(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	100 mL	<u>Dilution</u>	1
<u>Tech.</u>	AKH	<u>Analyst</u>	AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	c,ND

**Wet Chemistry (General)  
ASTM D6919-09**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	ASTM D6919-09
<u>Batch</u>	N/A	<u>Batch</u>	817739
<u>Date</u>	N/A	<u>Date</u>	02/05/2022 3:11 PM
<u>Container</u>	3223372003-D(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	5 mL	<u>Dilution</u>	10
<u>Tech.</u>	N/A	<u>Analyst</u>	JXL

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	5.24	mg/L	0.100	c

**Wet Chemistry (General)  
SM2130B-2011**

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	SM2130B-2011
<u>Batch</u>	N/A	<u>Batch</u>	814532
<u>Date</u>	N/A	<u>Date</u>	01/21/2022 9:01 AM
<u>Container</u>	3223372003-E(Unpreserved)	<u>Fraction</u>	
<u>Aliquot</u>	25 mL	<u>Dilution</u>	1
<u>Tech.</u>	N/A	<u>Analyst</u>	BXD

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	8.55	NTU	0.10	c

**Wet Chemistry (General)  
SM2320B-2011**



Client Sample ID **CWMP008W**  
 Lab Sample ID **3223372003**

Collected **01/20/2022 12:31 PM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Prep**

Method N/A      Container 3223372003-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	351	mg/L	5	C

**Wet Chemistry (General)  
 SM2320B-2011**

**Prep**

Method N/A      Container 3223372003-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	351	mg/L	5	C,1

**Wet Chemistry (General)  
 SM2510B-2011**

**Prep**

Method N/A      Container 3223372003-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2510B-2011      Fraction  
Batch 815197      Dilution 1  
Date 01/25/2022 3:55 PM      Analyst JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	859	umhos/cm	1	C

**Wet Chemistry (General)  
 S2540C-11**

**Prep**

Method N/A      Container 3223372003-E(Unpreserved)  
Batch N/A      Aliquot  
Date N/A      Tech. N/A

**Analysis**

Method S2540C-11      Fraction  
Batch 815191      Dilution 1  
Date 01/28/2022 7:38 AM      Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	434	mg/L	25	C



Client Sample ID	<b>CWMP008W</b>	Collected	<b>01/20/2022 12:31 PM</b>
Lab Sample ID	<b>3223372003</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

**Wet Chemistry (General)**  
**S4500HB-11**

Prep		Analysis	
Method	N/A	Method	S4500HB-11
Batch	N/A	Batch	814791
Date	N/A	Date	01/24/2022 9:11 PM
Container	3223372003-E(Unpreserved)	Fraction	
Aliquot	50 mL	Dilution	1
Tech.	N/A	Analyst	MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	6.76	pH_Units		c.5

**Wet Chemistry (General)**  
**SM5310B-2011**

Prep		Analysis	
Method	N/A	Method	SM5310B-2011
Batch	N/A	Batch	815214
Date	N/A	Date	01/25/2022 6:31 PM
Container	3223372003-A(Hydrochloric Acid)	Fraction	
Aliquot	6 mL	Dilution	2
Tech.	N/A	Analyst	PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	6.5	mg/L	1.0	c

**FLD**  
**Field**

Prep		Analysis	
Method	N/A	Method	Field
Batch	N/A	Batch	816408
Date	N/A	Date	01/20/2022 12:31 PM
Container	3223372003-G(Unpreserved)	Fraction	
Aliquot		Dilution	1
Tech.	N/A	Analyst	BGS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Depth to Water Level	DWL	2.40	Feet		c
Dissolved Oxygen	DO	0.15	mg/L	0.01	c
Elev Top MW Casing above MSL	781	422.30	Feet		c
Flow Rate	FRATE	0.83	gal/min		c
Ground Water Elevation	GWE	419.90	ft/MSL		c
Oxidation-Reduction Potential	ORP	-29	mV		c
pH, Field (SM4500B)	PHF	6.19	pH_Units		c
Sample Depth	SD	19.00	Feet		c
Specific Conductance, Field	CONDf	1102	umhos/cm	1	c
Temperature	Temp	13.33	Deg. C		c
Total Well Depth	TWD	22.80	Feet		c
Turbidity, Field	TURBF	ND	NTU	1	c,ND



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Client Sample ID	<b>CWMP008W</b>	Collected	<b>01/20/2022 12:31 PM</b>
Lab Sample ID	<b>3223372003</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

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*RESULTS*

<u>Compound</u>	<u>CAS No</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
Volume in Water Column	VWC	3.26	Gallons		C
Water Level After Purge	LAP	13.28	Feet		C
Well Volumes Purged	WVP	5.09	Vol		C

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Client Sample ID **CWMP010W**  
 Lab Sample ID **3223372004**

Collected **01/20/2022 1:21 PM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Volatiles - GC/MS**  
**SW846 8260B**

**Prep**

Method N/A                      Container 3223372004-H(Hydrochloric Acid)  
Batch N/A                        Aliquot 5 mL  
Date N/A                         Tech. N/A

**Analysis**

Method SW846 8260B                      Fraction VOA\_Trace  
Batch 814790                                 Dilution 1  
Date 01/24/2022 12:17 PM                Analyst DPC

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
1,1,1-Trichloroethane	71-55-6	ND	ug/L	1.0	C,ND
1,1,2,2-Tetrachloroethane	79-34-5	ND	ug/L	1.0	C,ND
1,1,2-Trichloroethane	79-00-5	ND	ug/L	1.0	C,ND
1,1-Dichloroethane	75-34-3	ND	ug/L	1.0	C,ND
1,1-Dichloroethene	75-35-4	ND	ug/L	1.0	C,ND
1,2,3-Trichloropropane	96-18-4	ND	ug/L	2.0	C,ND
1,2,4-Trichlorobenzene	120-82-1	ND	ug/L	2.0	C,ND
1,2-Dibromoethane	106-93-4	ND	ug/L	1.0	C,ND
1,2-Dichlorobenzene	95-50-1	ND	ug/L	1.0	C,ND
1,2-Dichloroethane	107-06-2	ND	ug/L	1.0	C,ND
1,2-Dichloropropane	78-87-5	ND	ug/L	1.0	C,ND
1,3-Dichlorobenzene	541-73-1	ND	ug/L	1.0	C,ND
1,3-Dichloropropene, Total	542-75-6	ND	ug/L	2.0	C,ND
1,4-Dichlorobenzene	106-46-7	ND	ug/L	1.0	C,ND
Benzene	71-43-2	ND	ug/L	1.0	C,ND
Bromodichloromethane	75-27-4	ND	ug/L	1.0	C,ND
Bromoform	75-25-2	ND	ug/L	1.0	C,ND
Bromomethane	74-83-9	ND	ug/L	1.0	C,ND
Carbon Tetrachloride	56-23-5	ND	ug/L	1.0	C,ND
Chlorobenzene	108-90-7	ND	ug/L	1.0	C,ND
Chlorodibromomethane	124-48-1	ND	ug/L	1.0	C,ND
Chloroethane	75-00-3	ND	ug/L	1.0	C,ND
Chloroform	67-66-3	ND	ug/L	1.0	C,ND
Chloromethane	74-87-3	ND	ug/L	1.0	C,ND
cis-1,2-Dichloroethene	156-59-2	ND	ug/L	1.0	C,ND
Ethylbenzene	100-41-4	ND	ug/L	1.0	C,ND
Methylene Chloride	75-09-2	ND	ug/L	1.0	C,ND
Styrene	100-42-5	ND	ug/L	1.0	C,ND
Tetrachloroethene	127-18-4	ND	ug/L	1.0	C,ND
Toluene	108-88-3	ND	ug/L	1.0	C,ND
Total Xylenes	1330-20-7	ND	ug/L	3.0	C,ND
trans-1,2-Dichloroethene	156-60-5	ND	ug/L	1.0	C,ND
Trichloroethene	79-01-6	ND	ug/L	1.0	C,ND
Trichlorofluoromethane	75-69-4	ND	ug/L	1.0	C,ND
Vinyl Chloride	75-01-4	ND	ug/L	1.0	C,ND



Client Sample ID	<b>CWMP010W</b>	Collected	<b>01/20/2022 1:21 PM</b>
Lab Sample ID	<b>3223372004</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

**SURROGATES**

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.60 %	62 - 133	
4-Bromofluorobenzene	460-00-4	106%	79 - 114	
Dibromofluoromethane	1868-53-7	93.90%	78 - 116	
Toluene-d8	2037-26-5	96.20%	76 - 127	

**Metals Analytical  
 SW846 6020A**

**Prep**

<u>Method</u>	SW846 3015	<u>Container</u>	3223372004-J1(Nitric Acid)
<u>Batch</u>	815247	<u>Aliquot</u>	45 mL
<u>Date</u>	01/25/2022 8:23 PM	<u>Tech.</u>	SXC

**Analysis**

<u>Method</u>	SW846 6020A	<u>Fraction</u>	ICP_MS
<u>Batch</u>	815755	<u>Dilution</u>	1
<u>Date</u>	01/27/2022 3:27 PM	<u>Analyst</u>	MO

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	37.5	mg/L	0.11	C
Iron, Total	7439-89-6	2.3	mg/L	0.056	C
Magnesium, Total	7439-95-4	36.8	mg/L	0.11	C
Manganese, Total	7439-96-5	0.37	mg/L	0.0056	C
Potassium, Total	7440-09-7	9.2	mg/L	0.11	C
Sodium, Total	7440-23-5	144	mg/L	0.11	C

**Wet Chemistry (General)  
 EPA 300.0**

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223372004-E(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	EPA 300.0	<u>Fraction</u>	
<u>Batch</u>	816142	<u>Dilution</u>	2
<u>Date</u>	01/29/2022 10:46 PM	<u>Analyst</u>	MSA

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	17.7	mg/L	1.0	C,0,4
Sulfate	SO4	26.6	mg/L	2.0	C,6

**Prep**

<u>Method</u>	N/A	<u>Container</u>	3223372004-E(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

**Analysis**

<u>Method</u>	EPA 300.0	<u>Fraction</u>	
<u>Batch</u>	819271	<u>Dilution</u>	10
<u>Date</u>	02/13/2022 9:41 PM	<u>Analyst</u>	MID

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
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Client Sample ID **CWMP010W**  
 Lab Sample ID **3223372004**

Collected **01/20/2022 1:21 PM**  
 Lab Receipt **01/20/2022 4:07 PM**

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	203	mg/L	10.0	C

**Wet Chemistry (General)  
 EPA 410.4**

**Prep**

Method N/A      Container 3223372004-D(Sulfuric Acid)  
Batch N/A      Aliquot 2 mL  
Date N/A      Tech. N/A

**Analysis**

Method EPA 410.4      Fraction  
Batch 817957      Dilution 1  
Date 02/04/2022 11:40 PM      Analyst NJA

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Chemical Oxygen Demand (COD)	COD	20	mg/L	15	C

**Wet Chemistry (General)  
 EPA 420.4**

**Prep**

Method 420.4/9066      Container 3223372004-C(Sulfuric Acid)  
Batch 814878      Aliquot 100 mL  
Date 01/28/2022 9:03 AM      Tech. AKH

**Analysis**

Method EPA 420.4      Fraction  
Batch 815975      Dilution 1  
Date 01/28/2022 1:24 PM      Analyst AKH

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Phenolics	PHENOL	ND	mg/L	0.005	C,ND

**Wet Chemistry (General)  
 ASTM D6919-09**

**Prep**

Method N/A      Container 3223372004-D(Sulfuric Acid)  
Batch N/A      Aliquot 5 mL  
Date N/A      Tech. N/A

**Analysis**

Method ASTM D6919-09      Fraction  
Batch 817739      Dilution 10  
Date 02/05/2022 3:25 PM      Analyst JXL

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Ammonia-N	NH3N	0.117	mg/L	0.100	C

**Wet Chemistry (General)  
 SM2130B-2011**





Client Sample ID **CWMP010W**  
 Lab Sample ID **3223372004**

Collected **01/20/2022 1:21 PM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Prep**

Method N/A      Container 3223372004-E(Unpreserved)  
Batch N/A      Aliquot 25 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2130B-2011      Fraction  
Batch 814532      Dilution 1  
Date 01/21/2022 9:01 AM      Analyst BXD

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	12.2	NTU	0.10	C

**Wet Chemistry (General)  
 SM2320B-2011**

**Prep**

Method N/A      Container 3223372004-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	178	mg/L	5	C

**Wet Chemistry (General)  
 SM2320B-2011**

**Prep**

Method N/A      Container 3223372004-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2320B-2011      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	178	mg/L	5	C,1

**Wet Chemistry (General)  
 SM2510B-2011**

**Prep**

Method N/A      Container 3223372004-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM2510B-2011      Fraction  
Batch 815197      Dilution 1  
Date 01/25/2022 3:55 PM      Analyst JSE

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	1380	umhos/cm	1	C



Client Sample ID **CWMP010W**  
 Lab Sample ID **3223372004**

Collected **01/20/2022 1:21 PM**  
 Lab Receipt **01/20/2022 4:07 PM**

**Wet Chemistry (General)**  
**S2540C-11**

**Prep**

Method N/A      Container 3223372004-E(Unpreserved)  
Batch N/A      Aliquot  
Date N/A      Tech. N/A

**Analysis**

Method S2540C-11      Fraction  
Batch 815191      Dilution 1  
Date 01/28/2022 7:38 AM      Analyst SMS

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	658	mg/L	25	c

**Wet Chemistry (General)**  
**S4500HB-11**

**Prep**

Method N/A      Container 3223372004-E(Unpreserved)  
Batch N/A      Aliquot 50 mL  
Date N/A      Tech. N/A

**Analysis**

Method S4500HB-11      Fraction  
Batch 814791      Dilution 1  
Date 01/24/2022 9:11 PM      Analyst MLW

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
pH	PH	7.43	pH_Units		c.5

**Wet Chemistry (General)**  
**SM5310B-2011**

**Prep**

Method N/A      Container 3223372004-A(Hydrochloric Acid)  
Batch N/A      Aliquot 6 mL  
Date N/A      Tech. N/A

**Analysis**

Method SM5310B-2011      Fraction  
Batch 815214      Dilution 1  
Date 01/25/2022 6:31 PM      Analyst PAG

**RESULTS**

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Organic Carbon (TOC)	TOC	4.2	mg/L	0.50	c

**FLD**  
**Field**

**Prep**

Method N/A      Container 3223372004-G(Unpreserved)  
Batch N/A      Aliquot  
Date N/A      Tech. N/A

**Analysis**

Method Field      Fraction  
Batch 816408      Dilution 1  
Date 01/20/2022 1:21 PM      Analyst BGS



Client Sample ID	<b>CWMP010W</b>	Collected	<b>01/20/2022 1:21 PM</b>
Lab Sample ID	<b>3223372004</b>	Lab Receipt	<b>01/20/2022 4:07 PM</b>

**RESULTS**

<u>Compound</u>	<u>CAS No</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
Depth to Water Level	DWL	8.49	Feet		C
Dissolved Oxygen	DO	4.76	mg/L	0.01	C
Elev Top MW Casing above MSL	781	360.90	Feet		C
Flow Rate	FRATE	0.88	gal/min		C
Ground Water Elevation	GWE	352.41	ft/MSL		C
Oxidation-Reduction Potential	ORP	98	mV		C
pH, Field (SM4500B)	PHF	6.74	pH_Units		C
Sample Depth	SD	17.00	Feet		C
Specific Conductance, Field	CONDF	1880	umhos/cm	1	C
Temperature	Temp	10.69	Deg. C		C
Total Well Depth	TWD	19.60	Feet		C
Turbidity, Field	TURBF	4	NTU	1	C
Volume in Water Column	VWC	7.22	Gallons		C
Water Level After Purge	LAP	15.95	Feet		C
Well Volumes Purged	WVP	1.22	Vol		C



### Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3223372001	CWMP016W	Field	N/A	
		SW846 6020A	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		EPA 420.4	420.4/9066	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	
3223372002	CWMP009W	Field	N/A	
		SW846 6020A	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		EPA 420.4	420.4/9066	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	
3223372003	CWMP008W	Field	N/A	
		SW846 6020A	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		EPA 420.4	420.4/9066	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	
3223372004	CWMP010W	Field	N/A	
		SW846 6020A	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		EPA 420.4	420.4/9066	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	



Generated by ALS

# CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: **ALS Quo**

3223372

301 Fulfilling Mill Road • Middletown, PA 17057 • Fax: 717.944.5541 • Fax: 717.944.1430  
www.alslab.com

Client Name: Lancaster County Solid Waste MA

Address: 1299 Harrisburg Pike, P.O. Box 4424

Lancaster, PA 17604

Contact: Dan Brown

Phone#: (717) 735-0193

Project Name#: Creswell/GWMP Form 19Q Wells

Bill To: Lancaster County Solid Waste MA

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

Date Required: \_\_\_\_\_ Approved By: \_\_\_\_\_

Email?  Y  N mreider@LCSWMA.com

Fax?  Y  N No: (717) 397-9973

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time
1. CWMP016W	01/20/22	1055
2. CWMP009W	01/20/22	1146
3. CWMP008W	01/20/22	1231
4. CWMP010W	01/20/22	1321
5		
6		
7		
8		
9		
10		

Project Comments:

LOGGED BY (signature):

REVIEWED BY (signature):

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
<i>[Signature]</i>	1-20-22	10:07	SCHVALS	1/20/22	10:07
3					
5					
7					
9					

\* G=Grab; C=Composite

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

ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

Rev 8/04

Container Type	AG	AN	CG	PL	PL	PL	PL	Re
Container Size	40 ml	125 ml	40 ml	250 ml	125 ml	500 ml	500 ml	
Preservative	HCl	H2SO4	HCl	H2SO4	HNO3	None	None	

### ANALYSES/METHOD REQUESTED

*GFC	*Matrix	Field Measurements	Sample Depth for AUX Data	Total Metals: Ca, Fe, Mn, Mg, K, Na	pH, NO3, Cl, F, SPC, SO4, Turb.	TDS	Alkalinity, HCO3	Cour
		8260 VOCs - Form 19Q						

### Enter Number of Containers Per Sample or Field Results Below.

*GFC	*Matrix	Field Measurements	Sample Depth for AUX Data	Total Metals: Ca, Fe, Mn, Mg, K, Na	pH, NO3, Cl, F, SPC, SO4, Turb.	TDS	Alkalinity, HCO3	Cour
G	GW	2	1	2	X	1	1	1
G	GW	2	1	2	X	1	1	1
G	GW	2	1	2	X	1	1	1
G	GW	2	1	2	X	1	1	1

Temp Taken By: *[Signature]*

WO Temp (°C): *5.0*

Therm ID: *STO*

Receipt Info Completed By: *[Signature]*

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 NA*

Correct Containers Provided: *Y N NA*

Sample Label/COC Agree: *Y N NA*

Adequate Sample Volumes: *Y N NA*

VOA Headspace Present: *Y N NA*

Voa Trip Blank: *Y N NA*

NIS: 4 Days? *Y N*

Rad Screen (uCi): *Y N*

Courier/Tracking #: *Y N*

SDWA Compliance: *Y N*

PWSID: *Y N*

*Ground water*

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

Special Processing	State Samples Collected In
USACE <input type="checkbox"/>	USACE <input type="checkbox"/>
Navy <input type="checkbox"/>	Navy <input type="checkbox"/>
	NY <input type="checkbox"/>
	NJ <input type="checkbox"/>
	PA <input checked="" type="checkbox"/>
	NC <input type="checkbox"/>

Sample Disposal
Lab <input checked="" type="checkbox"/>
Special <input type="checkbox"/>

Reportable to PADEP? Yes

PWSID #

EDDS: Format Type