

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT**



Date Prepared/Revised
09/26/2022

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: 7.39 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.50 ft

Elevation of Water Level: 446.01 ft./MSL

Sampling Depth: 33 ft

Volume of Water Column: 42.75 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): 7/18/2022

Sample Collection Time: 11:00

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): 3253552001 Final Lab Analysis Completion Date: 7/30/2022

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

Comments:

I.D. No 100008

Monitoring Point No. CWMP007W

Sample Date 7/18/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.135	EPA 350.3
BICARBONATE	14	SM18-2321
CALCIUM, TOTAL	82.7	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	71.1	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	17300	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	11.2	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	160	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	9.8	EPA 300.0
pH-FIELD (SU)	5.04	FIELD
pH-LAB (SU)	7	EPA 150.1
POTASSIUM, TOTAL	0.82	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	6.9	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	571	FIELD
SPEC. COND., LAB (umhos/cm)	404	EPA 120.1
SULFATE	16.3	EPA 300.0
ALKALINITY	14	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	286	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.73	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.3 ND	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 7/18/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
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
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: 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: 2.0

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 7/18/2022

Sample Collection Time: 12:37

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): 3253552002 Final Lab Analysis Completion Date: 7/30/2022

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

Comments:

I.D. No 100008

Monitoring Point No. CWMP001W

Sample Date 7/18/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.126	EPA 350.3
BICARBONATE	7	SM18-2321
CALCIUM, TOTAL	43	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	25	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	14600	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	10.5	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	140	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	18.3 E	EPA 300.0
pH-FIELD (SU)	4.78	FIELD
pH-LAB (SU)	6.76	EPA 150.1
POTASSIUM, TOTAL	1.1	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	14.1	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	379	FIELD
SPEC. COND., LAB (umhos/cm)	276	EPA 120.1
SULFATE	2	EPA 300.0
ALKALINITY	7	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	204	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.71	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	14	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 7/18/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
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

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: 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: 42.36 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: -0.37 ft

Elevation of Water Level: 471.07 ft./MSL

Sampling Depth: 130 ft

Volume of Water Column: 143.40 gal

Total Well Depth: 140 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 1.4

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 7/18/2022

Sample Collection Time: 14:11

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): 3253552003 Final Lab Analysis CompletionDate: 8/1/2022

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

Comments:

I.D. No 100008

Monitoring Point No. CWMP005W

Sample Date 7/18/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.123	EPA 350.3
BICARBONATE	18	SM18-2321
CALCIUM, TOTAL	52.5	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	54.9	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	670	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	14.2	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	68	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	8.1	EPA 300.0
pH-FIELD (SU)	5.05	FIELD
pH-LAB (SU)	7.07	EPA 150.1
POTASSIUM, TOTAL	0.78	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	29.4	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	434	FIELD
SPEC. COND., LAB (umhos/cm)	309	EPA 120.1
SULFATE	4.3	EPA 300.0
ALKALINITY	18	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	216	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	2.8	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 7/18/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
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
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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: 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: 12.15 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.53 ft Elevation of Water Level: 299.82 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: 1.6

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 7/20/2022 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): 3253973001 Final Lab Analysis Completion Date: 8/1/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 7/20/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	9	SM18-2321
CALCIUM, TOTAL	41.7	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	2.5	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	50800	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	5.7	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	870	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	2.3	EPA 300.0
pH-FIELD (SU)	5.11	FIELD
pH-LAB (SU)	6.89	EPA 150.1
POTASSIUM, TOTAL	1.2	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	11.8	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	83	FIELD
SPEC. COND., LAB (umhos/cm)	76	EPA 120.1
SULFATE	9.2	EPA 300.0
ALKALINITY	9	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	38	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.74	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	5.5	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 7/20/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
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

X	Well	Spring	Stream	Other
---	------	--------	--------	-------

Upgradient/Upstream X 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: 9.34 ft

Measured from: Land Surface X TOC

Casing Stickup: 2.70 ft

Elevation of Water Level: 394.86 ft./MSL

Sampling Depth: 16 ft

Volume of Water Column:	6.76	gal
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Total Well Depth: 19.7 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: X Yes No

Well Volumes Purged: 4.5

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 7/20/2022

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): 3253973002 Final Lab Analysis CompletionDate: 8/1/2022

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

Comments:

I.D. No 100008

Monitoring Point No. CWMP009W

Sample Date 7/20/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	37.5	EPA 350.3
BICARBONATE	554	SM18-2321
CALCIUM, TOTAL	30.1	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	109	EPA 410.4
CHLORIDE	621	EPA 300.0
FLUORIDE	1 ND	EPA 300.0
IRON, TOTAL (ug/l)	8900	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	4.3	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	350	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	5 ND	EPA 300.0
pH-FIELD (SU)	6.13	FIELD
pH-LAB (SU)	7.38	EPA 150.1
POTASSIUM, TOTAL	10.6	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	2.8	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	3740	FIELD
SPEC. COND., LAB (umhos/cm)	3400	EPA 120.1
SULFATE	10 ND	EPA 300.0
ALKALINITY	554	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1620	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	37.1	SM18-5310B
TOTAL PHENOLICS (ug/l)	10	SW846 9066
TURBIDITY (N.T.U.)	42	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 7/20/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	2	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
09/26/2022

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: 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): 7/21/2022 Sample Collection Time: 9:30

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): 3254276001 Final Lab Analysis Completion Date: 8/2/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP018S

Sample Date 7/21/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	450	SM18-2321
CALCIUM, TOTAL	86.2	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	24	EPA 410.4
CHLORIDE	709	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	330 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	206	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	210	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	16.7	EPA 300.0
pH-FIELD (SU)	8.43	FIELD
pH-LAB (SU)	8.57	EPA 150.1
POTASSIUM, TOTAL	63.2	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	1740	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1439	FIELD
SPEC. COND., LAB (umhos/cm)	3750	EPA 120.1
SULFATE	65.6	EPA 300.0
ALKALINITY	479	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1760	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	7.4	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	1.2	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. CWMP018S

Sample Date 7/21/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
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.



Date Prepared/Revised
09/26/2022

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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: CWMP010W

X	Well	Spring	Stream	Other
---	------	--------	--------	-------

Upgradient/Upstream X 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: 8.75 ft

Measured from: Land Surface X TOC

Casing Stickup: 2.10 ft

Elevation of Water Level: 352.15 ft./MSL

Sampling Depth: 17.5 ft

Volume of Water Column: 7.08 gal

Total Well Depth: 19.6 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X 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): 7/21/2022

Sample Collection Time: 9:55

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): 3254276002 Final Lab Analysis CompletionDate: 8/2/2022

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

Comments:

I.D. No 100008

Monitoring Point No. CWMP010W

Sample Date 7/21/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	258	SM18-2321
CALCIUM, TOTAL	45.8	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	19	EPA 410.4
CHLORIDE	431	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	78	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	53.2	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	40	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	14	EPA 300.0
pH-FIELD (SU)	6.56	FIELD
pH-LAB (SU)	7.76	EPA 150.1
POTASSIUM, TOTAL	18.6	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	425	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	2520	FIELD
SPEC. COND., LAB (umhos/cm)	2200	EPA 120.1
SULFATE	41.2	EPA 300.0
ALKALINITY	258	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1090	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	5.6	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	3.8	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 7/21/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
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.



Date Prepared/Revised
09/26/2022

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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: CWMP008W

X	Well	Spring	Stream	Other
---	------	--------	--------	-------

Upgradient/Upstream X 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: 3.47 ft

Measured from: Land Surface X TOC

Casing Stickup: 2.80 ft

Elevation of Water Level: 418.83 ft./MSL

Sampling Depth: 19 ft

Volume of Water Column: 3.15 gal

Total Well Depth: 22.8 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: X Yes No

Well Volumes Purged: 5.9

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 7/21/2022

Sample Collection Time: 10:32

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): 3254276003 Final Lab Analysis CompletionDate: 8/2/2022

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

Comments:

I.D. No 100008

Monitoring Point No. CWMP008W

Sample Date 7/21/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	6.88	EPA 350.3
BICARBONATE	452	SM18-2321
CALCIUM, TOTAL	104	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	34	EPA 410.4
CHLORIDE	59.8	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	330 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	268	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	180	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	1 ND	EPA 300.0
pH-FIELD (SU)	6.04	FIELD
pH-LAB (SU)	6.99	EPA 150.1
POTASSIUM, TOTAL	82.9	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	2290	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1241	FIELD
SPEC. COND., LAB (umhos/cm)	958	EPA 120.1
SULFATE	6.2	EPA 300.0
ALKALINITY	452	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	518	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	11.5	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	31	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 7/21/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	1.3	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1.8	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: 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): 7/21/2022 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): 3254276004 Final Lab Analysis Completion Date: 8/2/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP017S

Sample Date 7/21/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.102	EPA 350.3
BICARBONATE	374	SM18-2321
CALCIUM, TOTAL	90.9	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	17	EPA 410.4
CHLORIDE	601	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	330 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	207	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	150	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	15.2	EPA 300.0
pH-FIELD (SU)	7.78	FIELD
pH-LAB (SU)	8.26	EPA 150.1
POTASSIUM, TOTAL	63.9	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	1740	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	3714	FIELD
SPEC. COND., LAB (umhos/cm)	3240	EPA 120.1
SULFATE	66.4	EPA 300.0
ALKALINITY	374	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1520	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	4.6	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	4.5	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 7/21/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
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**



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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: 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: 64.87 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.90 ft Elevation of Water Level: 317.83 ft./MSL

Sampling Depth: 0 ft Volume of Water Column: 54.38 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): 7/22/2022 Sample Collection Time: 10:00

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): 3254467001 Final Lab Analysis Completion Date: 8/20/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP012W

Sample Date 7/22/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	80	SM18-2321
CALCIUM, TOTAL	32.1	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	39.1	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	42100	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	8.4	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	410	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	9.1	EPA 300.0
pH-FIELD (SU)	6.94	FIELD
pH-LAB (SU)	7.16	EPA 150.1
POTASSIUM, TOTAL	1.4	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	13.3	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	519	FIELD
SPEC. COND., LAB (umhos/cm)	339	EPA 120.1
SULFATE	6.1	EPA 300.0
ALKALINITY	80	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	206	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1.7	SM18-5310B
TOTAL PHENOLICS (ug/l)	30	SW846 9066
TURBIDITY (N.T.U.)	270	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 7/22/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
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
09/26/2022

DEP USE ONLY

Date Received

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

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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: 81.04 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: -1.19 ft Elevation of Water Level: 444.77 ft./MSL

Sampling Depth: 85 ft Volume of Water Column: 27.85 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): 7/22/2022 Sample Collection Time: 10:35

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): 3254467002 Final Lab Analysis Completion Date: 8/2/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP002W

Sample Date 7/22/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	60	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	80.5	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	8.5	EPA 300.0
pH-FIELD (SU)	6.78	FIELD
pH-LAB (SU)	6.89	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	640	FIELD
SPEC. COND., LAB (umhos/cm)	424	EPA 120.1
SULFATE	15.2	EPA 300.0
ALKALINITY	60	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	294	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1.3	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	12	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 7/22/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	2	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
09/26/2022

DEP USE ONLY

Date Received

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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: 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: 94.78 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: -1.29 ft Elevation of Water Level: 429.43 ft./MSL

Sampling Depth: 100 ft Volume of Water Column: -29.05 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): 7/22/2022 Sample Collection Time: 11:03

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): 3254467003 Final Lab Analysis Completion Date: 8/20/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP003W

Sample Date 7/22/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	22	SM18-2321
CALCIUM, TOTAL	23.2	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	87.1	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	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	5.6 ND	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	8.3	EPA 300.0
pH-FIELD (SU)	6.55	FIELD
pH-LAB (SU)	6.7	EPA 150.1
POTASSIUM, TOTAL	1.5	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	19.9	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	459	FIELD
SPEC. COND., LAB (umhos/cm)	354	EPA 120.1
SULFATE	7.5	EPA 300.0
ALKALINITY	22	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	206	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.89	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.51	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 7/22/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1.5	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
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Date Prepared/Revised
09/26/2022

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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: 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: 101.98 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: -1.37 ft

Elevation of Water Level: 427.55 ft./MSL

Sampling Depth: 130 ft

Volume of Water Column: 55.84 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): 7/22/2022

Sample Collection Time: 11:10

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): 3254467004 Final Lab Analysis CompletionDate: 8/20/2022

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

Comments:

I.D. No 100008

Monitoring Point No. CWMP004W

Sample Date 7/22/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	35	SM18-2321
CALCIUM, TOTAL	23.8	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	68.6	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	7.4	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	8.7	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	7.2	EPA 300.0
pH-FIELD (SU)	6.85	FIELD
pH-LAB (SU)	7	EPA 150.1
POTASSIUM, TOTAL	1.4	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	17.6	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	467	FIELD
SPEC. COND., LAB (umhos/cm)	316	EPA 120.1
SULFATE	7.5	EPA 300.0
ALKALINITY	35	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	178	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.85	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.6	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

^T Please indicate detection limit if analyte is not detected.

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Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP004W

Sample Date 7/22/2022

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ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
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

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 3rd QTR 2022 GWMP-FORM 19Q

Workorder 3254276

Report ID 186146 on 8/8/2022

Certificate of Analysis

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

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
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 Authority

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

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3254276001	CWMP018S	Ground Water	07/21/2022 09:30	07/21/2022 13:55	BGS	Analytical Laboratory Service
3254276002	CWMP010W	Ground Water	07/21/2022 09:55	07/21/2022 13:55	BGS	Analytical Laboratory Service
3254276003	CWMP008W	Ground Water	07/21/2022 10:32	07/21/2022 13:55	BGS	Analytical Laboratory Service
3254276004	CWMP017S	Ground Water	07/21/2022 10:50	07/21/2022 13:55	BGS	Analytical Laboratory Service



Reference

Notes

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

Standard Acronyms/Flags

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



Project Notations

Sample Notations

Lab ID	Sample ID		
3254276001	CWMP018S	S1	Sample temperature upon receipt at lab was greater than 6 °C.
3254276002	CWMP010W	S2	Sample temperature upon receipt at lab was greater than 6 °C.
3254276003	CWMP008W	S3	Sample temperature upon receipt at lab was greater than 6 °C.
3254276004	CWMP017S	S4	Sample temperature upon receipt at lab was greater than 6 °C.

Result Notations

Notation Ref.	
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	The sample was originally run within hold time, but required further analysis that exceeded hold time.
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 MSD for method EPA 300.0 was outside the control limits for the analyte Chloride. The % Recovery was reported as 129 and the control limits were 80 to 120.
5	This sample was reran within the instrument's calibration range, for the analyte Nitrate, and confirms the initial reported result.



Detected Results Summary

Client Sample ID	CWMP018S	Collected	07/21/2022 09:30		
Lab Sample ID	3254276001	Lab Receipt	07/21/2022 13:55		
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Dissolved Oxygen	7.99	mg/L	0.01	Field	#
pH, Field (SM4500B)	8.43	pH_Units		Field	#
Specific Conductance, Field	1439	umhos/cm	1	Field	#
Temperature	23.51	Deg. C		Field	#
METALS					
Calcium, Total	86.2	mg/L	0.56	SW846 6010C	#
Magnesium, Total	206	mg/L	0.56	SW846 6010C	#
Manganese, Total	0.21	mg/L	0.028	SW846 6010C	#
Potassium, Total	63.2	mg/L	2.8	SW846 6010C	#
Sodium, Total	1740	mg/L	2.8	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	450	mg/L	50	SM2320B-2011	#
Alkalinity, Total	479	mg/L	50	SM2320B-2011	#
Chemical Oxygen Demand (COD)	24	mg/L	15	EPA 410.4	#
Chloride	709	mg/L	25.0	EPA 300.0	#
Nitrate-N	16.7	mg/L	12.5	EPA 300.0	#
pH	8.57	pH_Units		S4500HB-11	#
Specific Conductance	3750	umhos/cm	10	SW846 9050A	#
Sulfate	65.6	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	1760	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	7.4	mg/L	0.50	SW846 9060A	#
Turbidity	1.2	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP010W	Collected	07/21/2022 09:55		
Lab Sample ID	3254276002	Lab Receipt	07/21/2022 13:55		
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	8.75	Feet		Field	#
Dissolved Oxygen	2.84	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	360.90	Feet		Field	#
Flow Rate	0.86	gal/min		Field	#
Ground Water Elevation	352.15	ft/MSL		Field	#
Oxidation-Reduction Potential	159	mV		Field	#
pH, Field (SM4500B)	6.56	pH_Units		Field	#
Sample Depth	17.50	Feet		Field	#
Specific Conductance, Field	2520	umhos/cm	1	Field	#
Temperature	16.47	Deg. C		Field	#
Total Well Depth	19.60	Feet		Field	#
Turbidity, Field	3	NTU	1	Field	#
Volume in Water Column	7.05	Gallons		Field	#
Water Level After Purge	17.21	Feet		Field	#
Well Volumes Purged	1.70	Vol		Field	#
METALS					
Calcium, Total	45.8	mg/L	0.11	SW846 6010C	#
Iron, Total	0.078	mg/L	0.067	SW846 6010C	#
Magnesium, Total	53.2	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.040	mg/L	0.0056	SW846 6010C	#
Potassium, Total	18.6	mg/L	0.56	SW846 6010C	#
Sodium, Total	425	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	258	mg/L	5	SM2320B-2011	#
Alkalinity, Total	258	mg/L	5	SM2320B-2011	#
Chemical Oxygen Demand (COD)	19	mg/L	15	EPA 410.4	#
Chloride	431	mg/L	25.0	EPA 300.0	#
Nitrate-N	14.0	mg/L	1.0	EPA 300.0	#
pH	7.76	pH_Units		S4500HB-11	#
Specific Conductance	2200	umhos/cm	10	SW846 9050A	#
Sulfate	41.2	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	1090	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	5.6	mg/L	0.50	SW846 9060A	#
Turbidity	3.8	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP008W	Collected	07/21/2022 10:32		
Lab Sample ID	3254276003	Lab Receipt	07/21/2022 13:55		
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	3.47	Feet		Field	#
Dissolved Oxygen	0.37	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	422.30	Feet		Field	#
Flow Rate	0.91	gal/min		Field	#
Ground Water Elevation	418.83	ft/MSL		Field	#
Oxidation-Reduction Potential	-40	mV		Field	#
pH, Field (SM4500B)	6.04	pH_Units		Field	#
Sample Depth	19.00	Feet		Field	#
Specific Conductance, Field	1241	umhos/cm	1	Field	#
Temperature	15.07	Deg. C		Field	#
Total Well Depth	22.80	Feet		Field	#
Turbidity, Field	2	NTU	1	Field	#
Volume in Water Column	3.09	Gallons		Field	#
Water Level After Purge	14.72	Feet		Field	#
Well Volumes Purged	5.89	Vol		Field	#
METALS					
Calcium, Total	104	mg/L	0.56	SW846 6010C	#
Magnesium, Total	268	mg/L	0.56	SW846 6010C	#
Manganese, Total	0.18	mg/L	0.028	SW846 6010C	#
Potassium, Total	82.9	mg/L	2.8	SW846 6010C	#
Sodium, Total	2290	mg/L	2.8	SW846 6010C	#
VOLATILE ORGANICS					
1,1-Dichloroethane	1.8	ug/L	1.0	SW846 8260B	#
Benzene	1.3	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	452	mg/L	50	SM2320B-2011	#
Alkalinity, Total	452	mg/L	50	SM2320B-2011	#
Ammonia-N	6.88	mg/L	0.100	ASTM D6919-09	#
Chemical Oxygen Demand (COD)	34	mg/L	15	EPA 410.4	#
Chloride	59.8	mg/L	2.0	EPA 300.0	#
pH	6.99	pH_Units		S4500HB-11	#
Specific Conductance	958	umhos/cm	1	SW846 9050A	#
Sulfate	6.2	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	518	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	11.5	mg/L	2.5	SW846 9060A	#
Turbidity	31	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP017S	Collected	07/21/2022 10:50		
Lab Sample ID	3254276004	Lab Receipt	07/21/2022 13:55		
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Dissolved Oxygen	7.30	mg/L	0.01	Field	#
pH, Field (SM4500B)	7.78	pH_Units		Field	#
Specific Conductance, Field	3714	umhos/cm	1	Field	#
Temperature	24.86	Deg. C		Field	#
METALS					
Calcium, Total	90.9	mg/L	0.56	SW846 6010C	#
Magnesium, Total	207	mg/L	0.56	SW846 6010C	#
Manganese, Total	0.15	mg/L	0.028	SW846 6010C	#
Potassium, Total	63.9	mg/L	2.8	SW846 6010C	#
Sodium, Total	1740	mg/L	2.8	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	374	mg/L	5	SM2320B-2011	#
Alkalinity, Total	374	mg/L	5	SM2320B-2011	#
Ammonia-N	0.102	mg/L	0.100	ASTM D6919-09	#
Chemical Oxygen Demand (COD)	17	mg/L	15	EPA 410.4	#
Chloride	601	mg/L	25.0	EPA 300.0	#
Nitrate-N	15.2	mg/L	12.5	EPA 300.0	#
pH	8.26	pH_Units		S4500HB-11	#
Specific Conductance	3240	umhos/cm	10	SW846 9050A	#
Sulfate	66.4	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	1520	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	4.6	mg/L	0.50	SW846 9060A	#
Turbidity	4.5	NTU	0.30	SM2130B-2011	#



Results

Client Sample ID	CWMP018S	Collected	07/21/2022 09:30
Lab Sample ID	3254276001	Lab Receipt	07/21/2022 13:55

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dissolved Oxygen	7.99	S1	mg/L	0.01	Field	1	07/21/2022 09:38	BGS	D
pH, Field (SM4500B)	8.43	S1	pH_Units		Field	1	07/21/2022 09:38	BGS	D
Specific Conductance, Field	1439	S1	umhos/cm	1	Field	1	07/21/2022 09:38	BGS	D
Temperature	23.51	S1	Deg. C		Field	1	07/21/2022 09:38	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	86.2	S1	mg/L	0.56	SW846 6010C	5	07/31/2022 10:02	SRT	J1
Iron, Total	ND	ND,S1	mg/L	0.33	SW846 6010C	5	07/31/2022 10:02	SRT	J1
Magnesium, Total	206	S1	mg/L	0.56	SW846 6010C	5	07/31/2022 10:02	SRT	J1
Manganese, Total	0.21	S1	mg/L	0.028	SW846 6010C	5	07/31/2022 10:02	SRT	J1
Potassium, Total	63.2	S1	mg/L	2.8	SW846 6010C	5	07/31/2022 10:02	SRT	J1
Sodium, Total	1740	S1	mg/L	2.8	SW846 6010C	5	07/31/2022 10:02	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
1,1-Dichloroethane	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
1,1-Dichloroethene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
1,2-Dibromoethane	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
1,2-Dichloroethane	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
Benzene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
cis-1,2-Dichloroethene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
Ethylbenzene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
Methylene Chloride	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
Tetrachloroethene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
Toluene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
Total Xylenes	ND	ND,S1	ug/L	3.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
trans-1,2-Dichloroethene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
Trichloroethene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H
Vinyl Chloride	ND	ND,S1	ug/L	1.0	SW846 8260B	1	07/26/2022 17:29	DPC	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	114%	62 – 133	07/26/2022 17:29	
4-Bromofluorobenzene	460-00-4	97.9%	79 – 114	07/26/2022 17:29	
Dibromofluoromethane	1868-53-7	100%	78 – 116	07/26/2022 17:29	
Toluene-d8	2037-26-5	97.1%	76 – 127	07/26/2022 17:29	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	450	S1	mg/L	50	SM2320B-2011	10	07/30/2022 13:09	BXD	B



Results

Client Sample ID	CWMP018S	Collected	07/21/2022 09:30
Lab Sample ID	3254276001	Lab Receipt	07/21/2022 13:55

WET CHEMISTRY (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Total	479	1,S1	mg/L	50	SM2320B-2011	10	07/30/2022 13:09	BXD	B
Ammonia-N	ND	ND,S1	mg/L	0.100	ASTM D6919-09	10	07/26/2022 14:05	NML	A
Chemical Oxygen Demand (COD)	24	S1	mg/L	15	EPA 410.4	1	07/25/2022 07:15	KMS	A
Chloride	709	S1	mg/L	25.0	EPA 300.0	25	07/26/2022 23:11	M1D	B
Fluoride	ND	ND,S1	mg/L	0.20	EPA 300.0	2	07/22/2022 02:03	M1D	B
Nitrate-N	16.7	2,S1	mg/L	12.5	EPA 300.0	25	07/26/2022 23:11	M1D	B
pH	8.57	3,S1	pH_Units		S4500HB-11	1	07/29/2022 16:19	BXD	B
Phenolics	ND	ND,S1	mg/L	0.004	SW846 9066	1	08/01/2022 21:14	AKH	G
Specific Conductance	3750	S1	umhos/cm	10	SW846 9050A	10	08/02/2022 13:27	BXD	B
Sulfate	65.6	S1	mg/L	2.0	EPA 300.0	2	07/22/2022 02:03	M1D	B
Total Dissolved Solids	1760	S1	mg/L	25	S2540C-11	1	07/25/2022 09:06	SMS	B
Total Organic Carbon (TOC)	7.4	S1	mg/L	0.50	SW846 9060A	1	07/27/2022 01:53	PAG	E
Turbidity	1.2	S1	NTU	0.30	SM2130B-2011	1	07/22/2022 00:13	LXZ	B



Results

Client Sample ID	CWMP010W	Collected	07/21/2022 09:55
Lab Sample ID	3254276002	Lab Receipt	07/21/2022 13:55

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	8.75	S2	Feet		Field	1	07/21/2022 09:55	BGS	D
Dissolved Oxygen	2.84	S2	mg/L	0.01	Field	1	07/21/2022 09:55	BGS	D
Elev Top MW Casing above MSL	360.90	S2	Feet		Field	1	07/21/2022 09:55	BGS	D
Flow Rate	0.86	S2	gal/min		Field	1	07/21/2022 09:55	BGS	D
Ground Water Elevation	352.15	S2	ft/MSL		Field	1	07/21/2022 09:55	BGS	D
Oxidation-Reduction Potential	159	S2	mV		Field	1	07/21/2022 09:55	BGS	D
pH, Field (SM4500B)	6.56	S2	pH_Units		Field	1	07/21/2022 09:55	BGS	D
Sample Depth	17.50	S2	Feet		Field	1	07/21/2022 09:55	BGS	D
Specific Conductance, Field	2520	S2	umhos/cm	1	Field	1	07/21/2022 09:55	BGS	D
Temperature	16.47	S2	Deg. C		Field	1	07/21/2022 09:55	BGS	D
Total Well Depth	19.60	S2	Feet		Field	1	07/21/2022 09:55	BGS	D
Turbidity, Field	3	S2	NTU	1	Field	1	07/21/2022 09:55	BGS	D
Volume in Water Column	7.05	S2	Gallons		Field	1	07/21/2022 09:55	BGS	D
Water Level After Purge	17.21	S2	Feet		Field	1	07/21/2022 09:55	BGS	D
Well Volumes Purged	1.70	S2	Vol		Field	1	07/21/2022 09:55	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	45.8	S2	mg/L	0.11	SW846 6010C	1	07/30/2022 16:22	SRT	J1
Iron, Total	0.078	S2	mg/L	0.067	SW846 6010C	1	07/30/2022 16:22	SRT	J1
Magnesium, Total	53.2	S2	mg/L	0.11	SW846 6010C	1	07/30/2022 16:22	SRT	J1
Manganese, Total	0.040	S2	mg/L	0.0056	SW846 6010C	1	07/30/2022 16:22	SRT	J1
Potassium, Total	18.6	S2	mg/L	0.56	SW846 6010C	1	07/30/2022 16:22	SRT	J1
Sodium, Total	425	S2	mg/L	0.56	SW846 6010C	1	07/30/2022 16:22	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
1,1-Dichloroethane	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
1,1-Dichloroethene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
1,2-Dibromoethane	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
1,2-Dichloroethane	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
Benzene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
cis-1,2-Dichloroethene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
Ethylbenzene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
Methylene Chloride	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
Tetrachloroethene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
Toluene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
Total Xylenes	ND	ND,S2	ug/L	3.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
trans-1,2-Dichloroethene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
Trichloroethene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H
Vinyl Chloride	ND	ND,S2	ug/L	1.0	SW846 8260B	1	07/26/2022 17:51	DPC	H



Results

Client Sample ID	CWMP010W	Collected	07/21/2022 09:55
Lab Sample ID	3254276002	Lab Receipt	07/21/2022 13:55

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
SURROGATES									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			113%	62 – 133		07/26/2022 17:51		
4-Bromofluorobenzene	460-00-4			98%	79 – 114		07/26/2022 17:51		
Dibromofluoromethane	1868-53-7			99.3%	78 – 116		07/26/2022 17:51		
Toluene-d8	2037-26-5			94.4%	76 – 127		07/26/2022 17:51		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	258	S2	mg/L	5	SM2320B-2011	1	07/29/2022 16:32	BXD	B
Alkalinity, Total	258	1,S2	mg/L	5	SM2320B-2011	1	07/29/2022 16:32	BXD	B
Ammonia-N	ND	ND,S2	mg/L	0.100	ASTM D6919-09	10	07/26/2022 09:18	NML	A
Chemical Oxygen Demand (COD)	19	S2	mg/L	15	EPA 410.4	1	07/25/2022 07:15	KMS	A
Chloride	431	4,S2	mg/L	25.0	EPA 300.0	25	07/26/2022 23:21	M1D	B
Fluoride	ND	ND,S2	mg/L	0.20	EPA 300.0	2	07/22/2022 02:13	M1D	B
Nitrate-N	14.0	5,S2	mg/L	1.0	EPA 300.0	2	07/22/2022 02:13	M1D	B
pH	7.76	3,S2	pH_Units		S4500HB-11	1	07/29/2022 16:32	BXD	B
Phenolics	ND	ND,S2	mg/L	0.004	SW846 9066	1	08/01/2022 21:17	AKH	G
Specific Conductance	2200	S2	umhos/cm	10	SW846 9050A	10	08/02/2022 13:27	BXD	B
Sulfate	41.2	S2	mg/L	2.0	EPA 300.0	2	07/22/2022 02:13	M1D	B
Total Dissolved Solids	1090	S2	mg/L	25	S2540C-11	1	07/25/2022 09:28	SMS	B
Total Organic Carbon (TOC)	5.6	S2	mg/L	0.50	SW846 9060A	1	07/27/2022 01:53	PAG	E
Turbidity	3.8	S2	NTU	0.30	SM2130B-2011	1	07/22/2022 00:13	LXZ	B



Results

Client Sample ID	CWMP008W	Collected	07/21/2022 10:32
Lab Sample ID	3254276003	Lab Receipt	07/21/2022 13:55

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	3.47	S3	Feet		Field	1	07/21/2022 10:32	BGS	D
Dissolved Oxygen	0.37	S3	mg/L	0.01	Field	1	07/21/2022 10:32	BGS	D
Elev Top MW Casing above MSL	422.30	S3	Feet		Field	1	07/21/2022 10:32	BGS	D
Flow Rate	0.91	S3	gal/min		Field	1	07/21/2022 10:32	BGS	D
Ground Water Elevation	418.83	S3	ft/MSL		Field	1	07/21/2022 10:32	BGS	D
Oxidation-Reduction Potential	-40	S3	mV		Field	1	07/21/2022 10:32	BGS	D
pH, Field (SM4500B)	6.04	S3	pH_Units		Field	1	07/21/2022 10:32	BGS	D
Sample Depth	19.00	S3	Feet		Field	1	07/21/2022 10:32	BGS	D
Specific Conductance, Field	1241	S3	umhos/cm	1	Field	1	07/21/2022 10:32	BGS	D
Temperature	15.07	S3	Deg. C		Field	1	07/21/2022 10:32	BGS	D
Total Well Depth	22.80	S3	Feet		Field	1	07/21/2022 10:32	BGS	D
Turbidity, Field	2	S3	NTU	1	Field	1	07/21/2022 10:32	BGS	D
Volume in Water Column	3.09	S3	Gallons		Field	1	07/21/2022 10:32	BGS	D
Water Level After Purge	14.72	S3	Feet		Field	1	07/21/2022 10:32	BGS	D
Well Volumes Purged	5.89	S3	Vol		Field	1	07/21/2022 10:32	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	104	S3	mg/L	0.56	SW846 6010C	5	07/31/2022 10:05	SRT	J1
Iron, Total	ND	ND,S3	mg/L	0.33	SW846 6010C	5	07/31/2022 10:05	SRT	J1
Magnesium, Total	268	S3	mg/L	0.56	SW846 6010C	5	07/31/2022 10:05	SRT	J1
Manganese, Total	0.18	S3	mg/L	0.028	SW846 6010C	5	07/31/2022 10:05	SRT	J1
Potassium, Total	82.9	S3	mg/L	2.8	SW846 6010C	5	07/31/2022 10:05	SRT	J1
Sodium, Total	2290	S3	mg/L	2.8	SW846 6010C	5	07/31/2022 10:05	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
1,1-Dichloroethane	1.8	S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
1,1-Dichloroethene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
1,2-Dibromoethane	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
1,2-Dichloroethane	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
Benzene	1.3	S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
cis-1,2-Dichloroethene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
Ethylbenzene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
Methylene Chloride	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
Tetrachloroethene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
Toluene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
Total Xylenes	ND	ND,S3	ug/L	3.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
trans-1,2-Dichloroethene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
Trichloroethene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H
Vinyl Chloride	ND	ND,S3	ug/L	1.0	SW846 8260B	1	07/26/2022 18:13	DPC	H



Results

Client Sample ID	CWMP008W	Collected	07/21/2022 10:32
Lab Sample ID	3254276003	Lab Receipt	07/21/2022 13:55

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RD L	Method	Dilution	Analysis Date/Time	By	Cntr
SURROGATES									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			113%	62 – 133		07/26/2022 18:13		
4-Bromofluorobenzene	460-00-4			98.4%	79 – 114		07/26/2022 18:13		
Dibromofluoromethane	1868-53-7			102%	78 – 116		07/26/2022 18:13		
Toluene-d8	2037-26-5			96.7%	76 – 127		07/26/2022 18:13		

WET CHEMISTRY

Compound	Result	Flag	Units	RD L	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	452	S3	mg/L	50	SM2320B-2011	10	07/30/2022 13:20	BXD	B
Alkalinity, Total	452	1,S3	mg/L	50	SM2320B-2011	10	07/30/2022 13:20	BXD	B
Ammonia-N	6.88	S3	mg/L	0.100	ASTM D6919-09	10	07/26/2022 11:07	NML	A
Chemical Oxygen Demand (COD)	34	S3	mg/L	15	EPA 410.4	1	07/25/2022 07:15	KMS	A
Chloride	59.8	S3	mg/L	2.0	EPA 300.0	2	07/22/2022 02:23	M1D	B
Fluoride	ND	ND,S3	mg/L	0.20	EPA 300.0	2	07/22/2022 02:23	M1D	B
Nitrate-N	ND	ND,S3	mg/L	1.0	EPA 300.0	2	07/22/2022 02:23	M1D	B
pH	6.99	3,S3	pH_Units		S4500HB-11	1	07/29/2022 16:45	BXD	B
Phenolics	ND	ND,S3	mg/L	0.004	SW846 9066	1	08/01/2022 21:21	AKH	G
Specific Conductance	958	S3	umhos/cm	1	SW846 9050A	1	08/02/2022 13:27	BXD	B
Sulfate	6.2	S3	mg/L	2.0	EPA 300.0	2	07/22/2022 02:23	M1D	B
Total Dissolved Solids	518	S3	mg/L	25	S2540C-11	1	07/25/2022 09:28	SMS	B
Total Organic Carbon (TOC)	11.5	S3	mg/L	2.5	SW846 9060A	5	07/27/2022 01:53	PAG	E
Turbidity	31	S3	NTU	0.30	SM2130B-2011	1	07/22/2022 00:13	LXZ	B



Results

Client Sample ID	CWMP017S	Collected	07/21/2022 10:50
Lab Sample ID	3254276004	Lab Receipt	07/21/2022 13:55

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dissolved Oxygen	7.30	S4	mg/L	0.01	Field	1	07/21/2022 10:50	BGS	D
pH, Field (SM4500B)	7.78	S4	pH_Units		Field	1	07/21/2022 10:50	BGS	D
Specific Conductance, Field	3714	S4	umhos/cm	1	Field	1	07/21/2022 10:50	BGS	D
Temperature	24.86	S4	Deg. C		Field	1	07/21/2022 10:50	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	90.9	S4	mg/L	0.56	SW846 6010C	5	07/31/2022 10:09	SRT	J1
Iron, Total	ND	ND,S4	mg/L	0.33	SW846 6010C	5	07/31/2022 10:09	SRT	J1
Magnesium, Total	207	S4	mg/L	0.56	SW846 6010C	5	07/31/2022 10:09	SRT	J1
Manganese, Total	0.15	S4	mg/L	0.028	SW846 6010C	5	07/31/2022 10:09	SRT	J1
Potassium, Total	63.9	S4	mg/L	2.8	SW846 6010C	5	07/31/2022 10:09	SRT	J1
Sodium, Total	1740	S4	mg/L	2.8	SW846 6010C	5	07/31/2022 10:09	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
1,1-Dichloroethane	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
1,1-Dichloroethene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
1,2-Dibromoethane	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
1,2-Dichloroethane	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
Benzene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
cis-1,2-Dichloroethene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
Ethylbenzene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
Methylene Chloride	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
Tetrachloroethene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
Toluene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
Total Xylenes	ND	ND,S4	ug/L	3.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
trans-1,2-Dichloroethene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
Trichloroethene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H
Vinyl Chloride	ND	ND,S4	ug/L	1.0	SW846 8260B	1	07/26/2022 18:35	DPC	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	113%	62 – 133	07/26/2022 18:35	
4-Bromofluorobenzene	460-00-4	98.9%	79 – 114	07/26/2022 18:35	
Dibromofluoromethane	1868-53-7	100%	78 – 116	07/26/2022 18:35	
Toluene-d8	2037-26-5	93.5%	76 – 127	07/26/2022 18:35	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	374	S4	mg/L	5	SM2320B-2011	1	07/29/2022 16:56	BXD	B



Results

Client Sample ID	CWMP017S	Collected	07/21/2022 10:50
Lab Sample ID	3254276004	Lab Receipt	07/21/2022 13:55

WET CHEMISTRY (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Total	374	1,S4	mg/L	5	SM2320B-2011	1	07/29/2022 16:56	BXD	B
Ammonia-N	0.102	S4	mg/L	0.100	ASTM D6919-09	10	07/27/2022 07:35	NML	A
Chemical Oxygen Demand (COD)	17	S4	mg/L	15	EPA 410.4	1	07/25/2022 07:15	KMS	A
Chloride	601	S4	mg/L	25.0	EPA 300.0	25	07/27/2022 00:13	M1D	B
Fluoride	ND	ND,S4	mg/L	0.20	EPA 300.0	2	07/22/2022 02:34	M1D	B
Nitrate-N	15.2	2,S4	mg/L	12.5	EPA 300.0	25	07/27/2022 00:13	M1D	B
pH	8.26	3,S4	pH_Units		S4500HB-11	1	07/29/2022 16:56	BXD	B
Phenolics	ND	ND,S4	mg/L	0.004	SW846 9066	1	08/01/2022 21:24	AKH	G
Specific Conductance	3240	S4	umhos/cm	10	SW846 9050A	10	08/02/2022 13:27	BXD	B
Sulfate	66.4	S4	mg/L	2.0	EPA 300.0	2	07/22/2022 02:34	M1D	B
Total Dissolved Solids	1520	S4	mg/L	25	S2540C-11	1	07/25/2022 09:28	SMS	B
Total Organic Carbon (TOC)	4.6	S4	mg/L	0.50	SW846 9060A	1	07/27/2022 01:53	PAG	E
Turbidity	4.5	S4	NTU	0.30	SM2130B-2011	1	07/22/2022 00:13	LXZ	B



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3254276001	CWMP018S	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	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	
3254276002	CWMP010W	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	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	
3254276003	CWMP008W	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	
3254276004	CWMP017S	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	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	



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3254276001	CWMP018S	N/A	N/A	N/A	ANN	Field	867703
		SW846 3015	866991	07/26/2022 23:07		SW846 6010C	867828
		N/A	N/A	N/A		SW846 8260B	866861
		N/A	N/A	N/A		ASTM D6919-09	866656
		N/A	N/A	N/A		EPA 300.0	866133
		N/A	N/A	N/A		EPA 300.0	866889
		N/A	N/A	N/A		EPA 410.4	866478
		N/A	N/A	N/A		S2540C-11	866359
		N/A	N/A	N/A		S4500HB-11	867673
		N/A	N/A	N/A		SM2130B-2011	866355
		N/A	N/A	N/A		SM2320B-2011	867826
		N/A	N/A	N/A		SW846 9050A	868207
		N/A	N/A	N/A		SW846 9060A	866937
		420.4/9066	867993	08/01/2022 10:08		SW846 9066	867998
3254276002	CWMP010W	N/A	N/A	N/A	ANN	Field	867703
		SW846 3015	866991	07/26/2022 23:07		SW846 6010C	867721
		N/A	N/A	N/A		SW846 8260B	866861
		N/A	N/A	N/A		ASTM D6919-09	866651
		N/A	N/A	N/A		EPA 300.0	866133
		N/A	N/A	N/A		EPA 300.0	866889
		N/A	N/A	N/A		EPA 410.4	866478
		N/A	N/A	N/A		S2540C-11	866360
		N/A	N/A	N/A		S4500HB-11	867673
		N/A	N/A	N/A		SM2130B-2011	866355
		N/A	N/A	N/A		SM2320B-2011	867673
		N/A	N/A	N/A		SW846 9050A	868207
		N/A	N/A	N/A		SW846 9060A	866937
		420.4/9066	867993	08/01/2022 10:08		SW846 9066	867998
3254276003	CWMP008W	N/A	N/A	N/A	ANN	Field	867703
		SW846 3015	866991	07/26/2022 23:07		SW846 6010C	867828
		N/A	N/A	N/A		SW846 8260B	866861
		N/A	N/A	N/A		ASTM D6919-09	866651
		N/A	N/A	N/A		EPA 300.0	866133
		N/A	N/A	N/A		EPA 410.4	866478
		N/A	N/A	N/A		S2540C-11	866360
		N/A	N/A	N/A		S4500HB-11	867673
		N/A	N/A	N/A		SM2130B-2011	866355
		N/A	N/A	N/A		SM2320B-2011	867826
		N/A	N/A	N/A		SW846 9050A	868207
		N/A	N/A	N/A		SW846 9060A	866937
		420.4/9066	867993	08/01/2022 10:08		SW846 9066	867998
3254276004	CWMP017S	N/A	N/A	N/A	ANN	Field	867703
		SW846 3015	866991	07/26/2022 23:07		SW846 6010C	867828
		N/A	N/A	N/A		SW846 8260B	866861
		N/A	N/A	N/A		ASTM D6919-09	866683
		N/A	N/A	N/A		EPA 300.0	866133
		N/A	N/A	N/A		EPA 300.0	866889
		N/A	N/A	N/A		EPA 410.4	866478
		N/A	N/A	N/A		S2540C-11	866360
		N/A	N/A	N/A		S4500HB-11	867673
		N/A	N/A	N/A		SM2130B-2011	866355
		N/A	N/A	N/A		SM2320B-2011	867673
		N/A	N/A	N/A		SW846 9050A	868207
		N/A	N/A	N/A		SW846 9060A	866937
		420.4/9066	867993	08/01/2022 10:08		SW846 9066	867998



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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: ☒ Y dbrown@LCSWMA.com Approved By:

Email? ☒ Y No.: (717) 397-9973

Fax? ☒ Y No.: (717) 397-9973

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time
1. CWMP018S	07/21/22	0930
2. CWMP010W	07/21/22	0955
3. CWMP008W	07/21/22	1032
4. CWMP017S	07/21/22	1050
5.		
6.		
7.		
8.		
9.		
10.		

Project Comments:

Relinquished By / Company Name

Date

Time

Received By / Company Name

Date

Time

LOGGED BY (signature):

REVIEWED BY (signature):

DATE

TIME

DATE

TIME

DATE

TIME

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

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(g Lab)

Cooler Temp: Therm ID:

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?

Temp Taken By:

WO Temp (°C)

Therm ID:

Receipt Info Completed By:

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

WV Containers 0.6°C

bor

ment

Rev 8/04



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

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

Analytical Results Report For

Lancaster County Solid Waste Authority

Project 3rd QTR 2022 GWMP-FORM 19Q

Workorder 3253552

Report ID 186214 on 8/8/2022

Certificate of Analysis

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

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
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 Authority

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

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3253552001	CWMP007W	Ground Water	07/18/2022 11:00	07/18/2022 15:15	BGS	Analytical Laboratory Service
3253552002	CWMP001W	Ground Water	07/18/2022 12:37	07/18/2022 15:15	BGS	Analytical Laboratory Service
3253552003	CWMP005W	Ground Water	07/18/2022 14:11	07/18/2022 15:15	BGS	Analytical Laboratory Service



Reference

Notes

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

Standard Acronyms/Flags

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



Project Notations

Sample Notations

Lab ID Sample ID

Result Notations

Notation Ref.

E	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 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.
3	This sample was reran within the instrument's calibration range, for the analyte Nitrate, and confirms the initial reported result.



Detected Results Summary

Client Sample ID	CWMP007W	Collected	07/18/2022 11:00		
Lab Sample ID	3253552001	Lab Receipt	07/18/2022 15:15		
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	7.39	Feet		Field	#
Dissolved Oxygen	5.18	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	453.40	Feet		Field	#
Flow Rate	1.45	gal/min		Field	#
Ground Water Elevation	446.01	ft/MSL		Field	#
Oxidation-Reduction Potential	323	mV		Field	#
pH, Field (SM4500B)	5.04	pH_Units		Field	#
Sample Depth	33.00	Feet		Field	#
Specific Conductance, Field	571	umhos/cm	1	Field	#
Temperature	13.12	Deg. C		Field	#
Total Well Depth	36.50	Feet		Field	#
Volume in Water Column	42.79	Gallons		Field	#
Water Level After Purge	8.18	Feet		Field	#
Well Volumes Purged	2.38	Vol		Field	#
METALS					
Calcium, Total	82.7	mg/L	0.11	SW846 6010C	#
Iron, Total	17.3	mg/L	0.067	SW846 6010C	#
Magnesium, Total	11.2	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.16	mg/L	0.0056	SW846 6010C	#
Potassium, Total	0.82	mg/L	0.56	SW846 6010C	#
Sodium, Total	6.9	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	14	mg/L	5	SM2320B-2011	#
Alkalinity, Total	14	mg/L	5	SM2320B-2011	#
Ammonia-N	0.135	mg/L	0.100	ASTM D6919-09	#
Chloride	71.1	mg/L	2.0	EPA 300.0	#
Nitrate-N	9.8	mg/L	1.0	EPA 300.0	#
pH	7.00	pH_Units		S4500HB-11	#
Specific Conductance	404	umhos/cm	1	SW846 9050A	#
Sulfate	16.3	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	286	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	0.73	mg/L	0.50	SW846 9060A	#



Detected Results Summary

Client Sample ID		CWMP001W		Collected		07/18/2022 12:37	
Lab Sample ID		3253552002		Lab Receipt		07/18/2022 15:15	
Compound	Result	Units	RDL	Method	Flag		
FIELD PARAMETERS							
Depth to Water Level	28.46	Feet		Field	#		
Dissolved Oxygen	8.56	mg/L	0.01	Field	#		
Elev Top MW Casing above MSL	515.13	Feet		Field	#		
Flow Rate	1.81	gal/min		Field	#		
Ground Water Elevation	486.67	ft/MSL		Field	#		
Oxidation-Reduction Potential	330	mV		Field	#		
pH, Field (SM4500B)	4.78	pH_Units		Field	#		
Sample Depth	57.00	Feet		Field	#		
Specific Conductance, Field	379	umhos/cm	1	Field	#		
Temperature	14.45	Deg. C		Field	#		
Total Well Depth	66.30	Feet		Field	#		
Turbidity, Field	16	NTU	1	Field	#		
Volume in Water Column	55.62	Gallons		Field	#		
Water Level After Purge	49.12	Feet		Field	#		
Well Volumes Purged	1.95	Vol		Field	#		
METALS							
Calcium, Total	43.0	mg/L	0.11	SW846 6010C	#		
Iron, Total	14.6	mg/L	0.067	SW846 6010C	#		
Magnesium, Total	10.5	mg/L	0.11	SW846 6010C	#		
Manganese, Total	0.14	mg/L	0.0056	SW846 6010C	#		
Potassium, Total	1.1	mg/L	0.56	SW846 6010C	#		
Sodium, Total	14.1	mg/L	0.56	SW846 6010C	#		
WET CHEMISTRY							
Alkalinity, Bicarbonate	7	mg/L	5	SM2320B-2011	#		
Alkalinity, Total	7	mg/L	5	SM2320B-2011	#		
Ammonia-N	0.126	mg/L	0.100	ASTM D6919-09	#		
Chloride	25.0	mg/L	2.0	EPA 300.0	#		
Nitrate-N	18.3	mg/L	1.0	EPA 300.0	#		
pH	6.76	pH_Units		S4500HB-11	#		
Specific Conductance	276	umhos/cm	1	SW846 9050A	#		
Sulfate	2.0	mg/L	2.0	EPA 300.0	#		
Total Dissolved Solids	204	mg/L	25	S2540C-11	#		
Total Organic Carbon (TOC)	0.71	mg/L	0.50	SW846 9060A	#		
Turbidity	14	NTU	0.30	SM2130B-2011	#		



Detected Results Summary

Client Sample ID		CWMP005W		Collected		07/18/2022 14:11	
Lab Sample ID		3253552003		Lab Receipt		07/18/2022 15:15	
Compound	Result	Units	RDL	Method	Flag		
FIELD PARAMETERS							
Depth to Water Level	42.36	Feet		Field	#		
Dissolved Oxygen	6.80	mg/L	0.01	Field	#		
Elev Top MW Casing above MSL	513.43	Feet		Field	#		
Flow Rate	2.92	gal/min		Field	#		
Ground Water Elevation	471.07	ft/MSL		Field	#		
Oxidation-Reduction Potential	281	mV		Field	#		
pH, Field (SM4500B)	5.05	pH_Units		Field	#		
Sample Depth	130.00	Feet		Field	#		
Specific Conductance, Field	434	umhos/cm	1	Field	#		
Temperature	13.90	Deg. C		Field	#		
Total Well Depth	138.92	Feet		Field	#		
Turbidity, Field	3	NTU	1	Field	#		
Volume in Water Column	141.94	Gallons		Field	#		
Water Level After Purge	44.74	Feet		Field	#		
Well Volumes Purged	1.44	Vol		Field	#		
METALS							
Calcium, Total	52.5	mg/L	0.11	SW846 6010C	#		
Iron, Total	0.67	mg/L	0.067	SW846 6010C	#		
Magnesium, Total	14.2	mg/L	0.11	SW846 6010C	#		
Manganese, Total	0.068	mg/L	0.0056	SW846 6010C	#		
Potassium, Total	0.78	mg/L	0.56	SW846 6010C	#		
Sodium, Total	29.4	mg/L	0.56	SW846 6010C	#		
WET CHEMISTRY							
Alkalinity, Bicarbonate	18	mg/L	5	SM2320B-2011	#		
Alkalinity, Total	18	mg/L	5	SM2320B-2011	#		
Ammonia-N	0.123	mg/L	0.100	ASTM D6919-09	#		
Chloride	54.9	mg/L	2.0	EPA 300.0	#		
Nitrate-N	8.1	mg/L	1.0	EPA 300.0	#		
pH	7.07	pH_Units		S4500HB-11	#		
Specific Conductance	309	umhos/cm	1	SW846 9050A	#		
Sulfate	4.3	mg/L	2.0	EPA 300.0	#		
Total Dissolved Solids	216	mg/L	25	S2540C-11	#		
Total Organic Carbon (TOC)	1.1	mg/L	0.50	SW846 9060A	#		
Turbidity	2.8	NTU	0.30	SM2130B-2011	#		



Results

Client Sample ID	CWMP007W	Collected	07/18/2022 11:00
Lab Sample ID	3253552001	Lab Receipt	07/18/2022 15:15

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	7.39		Feet		Field	1	07/18/2022 11:00	BGS	D
Dissolved Oxygen	5.18		mg/L	0.01	Field	1	07/18/2022 11:00	BGS	D
Elev Top MW Casing above MSL	453.40		Feet		Field	1	07/18/2022 11:00	BGS	D
Flow Rate	1.45		gal/min		Field	1	07/18/2022 11:00	BGS	D
Ground Water Elevation	446.01		ft/MSL		Field	1	07/18/2022 11:00	BGS	D
Oxidation-Reduction Potential	323		mV		Field	1	07/18/2022 11:00	BGS	D
pH, Field (SM4500B)	5.04		pH_Units		Field	1	07/18/2022 11:00	BGS	D
Sample Depth	33.00		Feet		Field	1	07/18/2022 11:00	BGS	D
Specific Conductance, Field	571		umhos/cm	1	Field	1	07/18/2022 11:00	BGS	D
Temperature	13.12		Deg. C		Field	1	07/18/2022 11:00	BGS	D
Total Well Depth	36.50		Feet		Field	1	07/18/2022 11:00	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	07/18/2022 11:00	BGS	D
Volume in Water Column	42.79		Gallons		Field	1	07/18/2022 11:00	BGS	D
Water Level After Purge	8.18		Feet		Field	1	07/18/2022 11:00	BGS	D
Well Volumes Purged	2.38		Vol		Field	1	07/18/2022 11:00	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	82.7		mg/L	0.11	SW846 6010C	1	07/30/2022 15:12	SRT	J1
Iron, Total	17.3		mg/L	0.067	SW846 6010C	1	07/30/2022 15:12	SRT	J1
Magnesium, Total	11.2		mg/L	0.11	SW846 6010C	1	07/30/2022 15:12	SRT	J1
Manganese, Total	0.16		mg/L	0.0056	SW846 6010C	1	07/30/2022 15:12	SRT	J1
Potassium, Total	0.82		mg/L	0.56	SW846 6010C	1	07/30/2022 15:12	SRT	J1
Sodium, Total	6.9		mg/L	0.56	SW846 6010C	1	07/30/2022 15:12	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 06:46	PDK	H



Results

Client Sample ID	CWMP007W	Collected	07/18/2022 11:00
Lab Sample ID	3253552001	Lab Receipt	07/18/2022 15:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
SURROGATES									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			101%	62 – 133		07/21/2022 06:46		
4-Bromofluorobenzene	460-00-4			94.6%	79 – 114		07/21/2022 06:46		
Dibromofluoromethane	1868-53-7			86.1%	78 – 116		07/21/2022 06:46		
Toluene-d8	2037-26-5			80.4%	76 – 127		07/21/2022 06:46		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	14		mg/L	5	SM2320B-2011	1	07/22/2022 06:42	BXD	B
Alkalinity, Total	14	1	mg/L	5	SM2320B-2011	1	07/22/2022 06:42	BXD	B
Ammonia-N	0.135		mg/L	0.100	ASTM D6919-09	10	07/21/2022 10:23	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/19/2022 12:50	KMS	A
Chloride	71.1		mg/L	2.0	EPA 300.0	2	07/19/2022 12:33	GJB	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/19/2022 12:33	GJB	B
Nitrate-N	9.8		mg/L	1.0	EPA 300.0	2	07/19/2022 12:33	GJB	B
pH	7.00	2	pH_Units		S4500HB-11	1	07/22/2022 06:42	BXD	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/26/2022 20:06	AKH	G
Specific Conductance	404		umhos/cm	1	SW846 9050A	1	07/29/2022 16:18	BXD	B
Sulfate	16.3		mg/L	2.0	EPA 300.0	2	07/19/2022 12:33	GJB	B
Total Dissolved Solids	286		mg/L	25	S2540C-11	1	07/21/2022 08:56	SMS	B
Total Organic Carbon (TOC)	0.73		mg/L	0.50	SW846 9060A	1	07/20/2022 01:49	PAG	E
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	07/19/2022 11:17	BXD	B



Results

Client Sample ID	CWMP001W	Collected	07/18/2022 12:37
Lab Sample ID	3253552002	Lab Receipt	07/18/2022 15:15

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	28.46		Feet		Field	1	07/18/2022 12:37	BGS	D
Dissolved Oxygen	8.56		mg/L	0.01	Field	1	07/18/2022 12:37	BGS	D
Elev Top MW Casing above MSL	515.13		Feet		Field	1	07/18/2022 12:37	BGS	D
Flow Rate	1.81		gal/min		Field	1	07/18/2022 12:37	BGS	D
Ground Water Elevation	486.67		ft/MSL		Field	1	07/18/2022 12:37	BGS	D
Oxidation-Reduction Potential	330		mV		Field	1	07/18/2022 12:37	BGS	D
pH, Field (SM4500B)	4.78		pH_Units		Field	1	07/18/2022 12:37	BGS	D
Sample Depth	57.00		Feet		Field	1	07/18/2022 12:37	BGS	D
Specific Conductance, Field	379		umhos/cm	1	Field	1	07/18/2022 12:37	BGS	D
Temperature	14.45		Deg. C		Field	1	07/18/2022 12:37	BGS	D
Total Well Depth	66.30		Feet		Field	1	07/18/2022 12:37	BGS	D
Turbidity, Field	16		NTU	1	Field	1	07/18/2022 12:37	BGS	D
Volume in Water Column	55.62		Gallons		Field	1	07/18/2022 12:37	BGS	D
Water Level After Purge	49.12		Feet		Field	1	07/18/2022 12:37	BGS	D
Well Volumes Purged	1.95		Vol		Field	1	07/18/2022 12:37	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	43.0		mg/L	0.11	SW846 6010C	1	07/30/2022 15:16	SRT	J1
Iron, Total	14.6		mg/L	0.067	SW846 6010C	1	07/30/2022 15:16	SRT	J1
Magnesium, Total	10.5		mg/L	0.11	SW846 6010C	1	07/30/2022 15:16	SRT	J1
Manganese, Total	0.14		mg/L	0.0056	SW846 6010C	1	07/30/2022 15:16	SRT	J1
Potassium, Total	1.1		mg/L	0.56	SW846 6010C	1	07/30/2022 15:16	SRT	J1
Sodium, Total	14.1		mg/L	0.56	SW846 6010C	1	07/30/2022 15:16	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:09	PDK	H



Results

Client Sample ID	CWMP001W	Collected	07/18/2022 12:37
Lab Sample ID	3253552002	Lab Receipt	07/18/2022 15:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
SURROGATES									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			101%	62 – 133		07/21/2022 07:09		
4-Bromofluorobenzene	460-00-4			96%	79 – 114		07/21/2022 07:09		
Dibromofluoromethane	1868-53-7			85.9%	78 – 116		07/21/2022 07:09		
Toluene-d8	2037-26-5			80.3%	76 – 127		07/21/2022 07:09		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	7		mg/L	5	SM2320B-2011	1	07/22/2022 06:54	BXD	B
Alkalinity, Total	7	1	mg/L	5	SM2320B-2011	1	07/22/2022 06:54	BXD	B
Ammonia-N	0.126		mg/L	0.100	ASTM D6919-09	10	07/21/2022 11:05	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/19/2022 12:50	KMS	A
Chloride	25.0		mg/L	2.0	EPA 300.0	2	07/19/2022 12:43	GJB	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/19/2022 12:43	GJB	B
Nitrate-N	18.3	E,3	mg/L	1.0	EPA 300.0	2	07/19/2022 12:43	GJB	B
pH	6.76	2	pH_Units		S4500HB-11	1	07/22/2022 06:54	BXD	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/26/2022 18:13	AKH	G
Specific Conductance	276		umhos/cm	1	SW846 9050A	1	07/29/2022 16:18	BXD	B
Sulfate	2.0		mg/L	2.0	EPA 300.0	2	07/19/2022 12:43	GJB	B
Total Dissolved Solids	204		mg/L	25	S2540C-11	1	07/21/2022 08:56	SMS	B
Total Organic Carbon (TOC)	0.71		mg/L	0.50	SW846 9060A	1	07/21/2022 00:48	PAG	E
Turbidity	14		NTU	0.30	SM2130B-2011	1	07/19/2022 11:17	BXD	B



Results

Client Sample ID	CWMP005W	Collected	07/18/2022 14:11
Lab Sample ID	3253552003	Lab Receipt	07/18/2022 15:15

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	42.36		Feet		Field	1	07/18/2022 14:11	BGS	D
Dissolved Oxygen	6.80		mg/L	0.01	Field	1	07/18/2022 14:11	BGS	D
Elev Top MW Casing above MSL	513.43		Feet		Field	1	07/18/2022 14:11	BGS	D
Flow Rate	2.92		gal/min		Field	1	07/18/2022 14:11	BGS	D
Ground Water Elevation	471.07		ft/MSL		Field	1	07/18/2022 14:11	BGS	D
Oxidation-Reduction Potential	281		mV		Field	1	07/18/2022 14:11	BGS	D
pH, Field (SM4500B)	5.05		pH_Units		Field	1	07/18/2022 14:11	BGS	D
Sample Depth	130.00		Feet		Field	1	07/18/2022 14:11	BGS	D
Specific Conductance, Field	434		umhos/cm	1	Field	1	07/18/2022 14:11	BGS	D
Temperature	13.90		Deg. C		Field	1	07/18/2022 14:11	BGS	D
Total Well Depth	138.92		Feet		Field	1	07/18/2022 14:11	BGS	D
Turbidity, Field	3		NTU	1	Field	1	07/18/2022 14:11	BGS	D
Volume in Water Column	141.94		Gallons		Field	1	07/18/2022 14:11	BGS	D
Water Level After Purge	44.74		Feet		Field	1	07/18/2022 14:11	BGS	D
Well Volumes Purged	1.44		Vol		Field	1	07/18/2022 14:11	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	52.5		mg/L	0.11	SW846 6010C	1	07/30/2022 15:23	SRT	J1
Iron, Total	0.67		mg/L	0.067	SW846 6010C	1	07/30/2022 15:23	SRT	J1
Magnesium, Total	14.2		mg/L	0.11	SW846 6010C	1	07/30/2022 15:23	SRT	J1
Manganese, Total	0.068		mg/L	0.0056	SW846 6010C	1	07/30/2022 15:23	SRT	J1
Potassium, Total	0.78		mg/L	0.56	SW846 6010C	1	07/30/2022 15:23	SRT	J1
Sodium, Total	29.4		mg/L	0.56	SW846 6010C	1	07/30/2022 15:23	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/21/2022 07:31	PDK	H



Results

Client Sample ID	CWMP005W	Collected	07/18/2022 14:11
Lab Sample ID	3253552003	Lab Receipt	07/18/2022 15:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
SURROGATES									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			102%	62 – 133		07/21/2022 07:31		
4-Bromofluorobenzene	460-00-4			100%	79 – 114		07/21/2022 07:31		
Dibromofluoromethane	1868-53-7			87.3%	78 – 116		07/21/2022 07:31		
Toluene-d8	2037-26-5			82.1%	76 – 127		07/21/2022 07:31		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	18		mg/L	5	SM2320B-2011	1	07/22/2022 07:37	BXD	B
Alkalinity, Total	18	1	mg/L	5	SM2320B-2011	1	07/22/2022 07:37	BXD	B
Ammonia-N	0.123		mg/L	0.100	ASTM D6919-09	10	07/21/2022 11:19	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/19/2022 12:50	KMS	A
Chloride	54.9		mg/L	2.0	EPA 300.0	2	07/19/2022 12:53	GJB	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/19/2022 12:53	GJB	B
Nitrate-N	8.1		mg/L	1.0	EPA 300.0	2	07/19/2022 12:53	GJB	B
pH	7.07	2	pH_Units		S4500HB-11	1	07/22/2022 07:37	BXD	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	08/01/2022 19:27	AKH	G
Specific Conductance	309		umhos/cm	1	SW846 9050A	1	07/29/2022 16:18	BXD	B
Sulfate	4.3		mg/L	2.0	EPA 300.0	2	07/19/2022 12:53	GJB	B
Total Dissolved Solids	216		mg/L	25	S2540C-11	1	07/21/2022 08:56	SMS	B
Total Organic Carbon (TOC)	1.1		mg/L	0.50	SW846 9060A	1	07/20/2022 01:49	PAG	E
Turbidity	2.8		NTU	0.30	SM2130B-2011	1	07/19/2022 11:17	BXD	B



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3253552001	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	
3253552002	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	
3253552003	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	



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3253552001	CWMP007W	N/A	N/A	N/A	ANN	Field	867703
		SW846 3015	866991	07/26/2022 23:07		SW846 6010C	867721
		N/A	N/A	N/A		SW846 8260B	865853
		N/A	N/A	N/A		ASTM D6919-09	865726
		N/A	N/A	N/A		EPA 300.0	864937
		N/A	N/A	N/A		EPA 410.4	864924
		N/A	N/A	N/A		S2540C-11	865353
		N/A	N/A	N/A		S4500HB-11	866011
		N/A	N/A	N/A		SM2130B-2011	864938
		N/A	N/A	N/A		SM2320B-2011	866011
		N/A	N/A	N/A		SW846 9050A	867672
		N/A	N/A	N/A		SW846 9060A	865077
		420.4/9066	866123	07/22/2022 07:12	AKH	SW846 9066	866818
3253552002	CWMP001W	N/A	N/A	N/A	ANN	Field	867703
		SW846 3015	866991	07/26/2022 23:07		SW846 6010C	867721
		N/A	N/A	N/A		SW846 8260B	865853
		N/A	N/A	N/A		ASTM D6919-09	865726
		N/A	N/A	N/A		EPA 300.0	864937
		N/A	N/A	N/A		EPA 410.4	864924
		N/A	N/A	N/A		S2540C-11	865353
		N/A	N/A	N/A		S4500HB-11	866011
		N/A	N/A	N/A		SM2130B-2011	864938
		N/A	N/A	N/A		SM2320B-2011	866011
		N/A	N/A	N/A		SW846 9050A	867672
		N/A	N/A	N/A		SW846 9060A	865780
		420.4/9066	866122	07/22/2022 07:11	AKH	SW846 9066	866818
3253552003	CWMP005W	N/A	N/A	N/A	ANN	Field	867703
		SW846 3015	866991	07/26/2022 23:07		SW846 6010C	867721
		N/A	N/A	N/A		SW846 8260B	865853
		N/A	N/A	N/A		ASTM D6919-09	865726
		N/A	N/A	N/A		EPA 300.0	864937
		N/A	N/A	N/A		EPA 410.4	864924
		N/A	N/A	N/A		S2540C-11	865353
		N/A	N/A	N/A		S4500HB-11	866011
		N/A	N/A	N/A		SM2130B-2011	864938
		N/A	N/A	N/A		SM2320B-2011	866011
		N/A	N/A	N/A		SW846 9050A	867672
		N/A	N/A	N/A		SW846 9060A	865077
		420.4/9066	866126	07/22/2022 07:14	AKH	SW846 9066	867998



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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

Generated by ALS

COC

3253552

Logged By: KSB
PH: SJB

1 of 1

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 dbrown@LCSWMA.com

Fax? ☒ Y No: (717) 397-9973

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time
1. CWMP007W	07/18/22	1100
2. CWMP001W	07/18/22	1237
3. CWMP005W	07/18/22	1411
4		
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>	7-18-22	1502	<i>[Signature]</i>	7/18/22	1515
3					
5					
7					
9					

Container Type	AG	AN	CG	PL	PL	PL	PL
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

Field Measurements	8260 VOCs - Form 19Q	O-H	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
Matrix	G	GW	G	GW	G	GW

Enter Number of Containers Per Sample or Field Results Below.

1	2	1	1	1	1	1
2	2	1	1	1	1	1
3	2	1	1	1	1	1
4						
5						
6						
7						
8						
9						
10						

Receipt information (completed by Receiving Lab)

Cooler Temp: _____ Therm ID: _____

No. of Coolers: _____ Y N Initial

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

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

Standard	Special Processing	State Samples Collected In
☐ Standard	USACE	NY
☐ CLP-like	Navy	NJ
☐ USACE		PA
☐		NC
Reportable to PADEP?	Sample Disposal	
Yes ☐	Lab ☒	
PWSID #	Special ☐	
EDDS: Format Type-		

* G=Grab; C=Composite **Matrix - AL=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



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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 3rd QTR 2022 GWMP-FORM 19Q

Workorder 3254467

Report ID 189023 on 8/23/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 22, 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.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
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 Authority

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

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3254467001	CWMP012W	Ground Water	07/22/2022 10:00	07/22/2022 13:55	BGS	Analytical Laboratory Service
3254467002	CWMP002W	Ground Water	07/22/2022 10:35	07/22/2022 13:55	BGS	Analytical Laboratory Service
3254467003	CWMP003W	Ground Water	07/22/2022 11:03	07/22/2022 13:55	BGS	Analytical Laboratory Service
3254467004	CWMP004W	Ground Water	07/22/2022 11:10	07/22/2022 13:55	BGS	Analytical Laboratory Service
3254467005	Field Blank	Water	07/22/2022 12:25	07/22/2022 13:55	BGS	Analytical Laboratory Service
3254467006	Trip Blank	Water	07/22/2022 13:55	07/22/2022 13:55	BGS	Analytical Laboratory Service



Reference

Notes

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

Standard Acronyms/Flags

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



Project Notations

Sample Notations

Lab ID Sample ID

Result Notations

Notation Ref.	
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	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.
3	The QC sample type, MS, was not spiked due to analyst error. No recovery can be provided due to this.
4	The QC sample type MSD for method EPA 300.0 was outside the control limits for the analyte Chloride. The % Recovery was reported as 64.1 and the control limits were 80 to 120.
5	The QC sample type MS for method EPA 300.0 was outside the control limits for the analyte Chloride. The % Recovery was reported as 60.7 and the control limits were 80 to 120.
6	The QC sample type MS for method EPA 300.0 was outside the control limits for the analyte Nitrate-N. The % Recovery was reported as 62.9 and the control limits were 80 to 120.
7	The QC sample type MSD for method EPA 300.0 was outside the control limits for the analyte Nitrate-N. The % Recovery was reported as 66.6 and the control limits were 80 to 120.



Detected Results Summary

Client Sample ID		CWMP012W		Collected	07/22/2022 10:00
Lab Sample ID		3254467001		Lab Receipt	07/22/2022 13:55
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	64.87	Feet		Field	#
pH, Field (SM4500B)	6.94	pH_Units		Field	#
Specific Conductance, Field	519	umhos/cm	1	Field	#
Temperature	18.22	Deg. C		Field	#
METALS					
Calcium, Total	32.1	mg/L	0.11	SW846 6010C	#
Iron, Total	42.1	mg/L	0.067	SW846 6010C	#
Magnesium, Total	8.4	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.41	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.4	mg/L	0.56	SW846 6010C	#
Sodium, Total	13.3	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	80	mg/L	5	SM2320B-2011	#
Alkalinity, Total	80	mg/L	5	SM2320B-2011	#
Chloride	39.1	mg/L	2.0	EPA 300.0	#
Nitrate-N	9.1	mg/L	1.0	EPA 300.0	#
pH	7.16	pH_Units		S4500HB-11	#
Phenolics	0.03	mg/L	0.008	SW846 9066	#
Specific Conductance	339	umhos/cm	1	SW846 9050A	#
Sulfate	6.1	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	206	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	1.7	mg/L	0.50	SW846 9060A	#
Turbidity	270	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP002W	Collected	07/22/2022 10:35		
Lab Sample ID	3254467002	Lab Receipt	07/22/2022 13:55		
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	81.04	Feet		Field	#
Elev Top MW Casing above MSL	525.81	Feet		Field	#
Ground Water Elevation	444.77	ft/MSL		Field	#
pH, Field (SM4500B)	6.78	pH_Units		Field	#
Sample Depth	85.00	Feet		Field	#
Specific Conductance, Field	640	umhos/cm	1	Field	#
Temperature	14.26	Deg. C		Field	#
Total Well Depth	100.00	Feet		Field	#
VOLATILE ORGANICS					
1,1-Dichloroethane	2.0	ug/L	1.0	SW846 8260B	#
Chloromethane	1.3	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	60	mg/L	5	SM2320B-2011	#
Alkalinity, Total	60	mg/L	5	SM2320B-2011	#
Chloride	80.5	mg/L	2.0	EPA 300.0	#
Nitrate-N	8.5	mg/L	1.0	EPA 300.0	#
pH	6.89	pH_Units		S4500HB-11	#
Specific Conductance	424	umhos/cm	1	SW846 9050A	#
Sulfate	15.2	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	294	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	1.3	mg/L	0.50	SW846 9060A	#
Turbidity	12	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP003W	Collected	07/22/2022 11:03		
Lab Sample ID	3254467003	Lab Receipt	07/22/2022 13:55		
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	94.78	Feet		Field	#
Elev Top MW Casing above MSL	524.21	Feet		Field	#
Ground Water Elevation	429.43	ft/MSL		Field	#
pH, Field (SM4500B)	6.55	pH_Units		Field	#
Sample Depth	100.00	Feet		Field	#
Specific Conductance, Field	459	umhos/cm	1	Field	#
Temperature	15.13	Deg. C		Field	#
Total Well Depth	140.00	Feet		Field	#
METALS					
Calcium, Total	23.2	mg/L	0.11	SW846 6010C	#
Magnesium, Total	8.0	mg/L	0.11	SW846 6010C	#
Potassium, Total	1.5	mg/L	0.56	SW846 6010C	#
Sodium, Total	19.9	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
1,1-Dichloroethane	1.5	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	22	mg/L	5	SM2320B-2011	#
Alkalinity, Total	22	mg/L	5	SM2320B-2011	#
Chloride	87.1	mg/L	2.0	EPA 300.0	#
Nitrate-N	8.3	mg/L	1.0	EPA 300.0	#
pH	6.70	pH_Units		S4500HB-11	#
Specific Conductance	354	umhos/cm	1	SW846 9050A	#
Sulfate	7.5	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	206	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	0.89	mg/L	0.50	SW846 9060A	#
Turbidity	0.51	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP004W	Collected	07/22/2022 11:10		
Lab Sample ID	3254467004	Lab Receipt	07/22/2022 13:55		
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	101.98	Feet		Field	#
Elev Top MW Casing above MSL	529.53	Feet		Field	#
Ground Water Elevation	427.55	ft/MSL		Field	#
pH, Field (SM4500B)	6.85	pH_Units		Field	#
Sample Depth	130.00	Feet		Field	#
Specific Conductance, Field	467	umhos/cm	1	Field	#
Temperature	15.23	Deg. C		Field	#
Total Well Depth	140.00	Feet		Field	#
METALS					
Calcium, Total	23.8	mg/L	0.11	SW846 6010C	#
Magnesium, Total	7.4	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.0087	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.4	mg/L	0.56	SW846 6010C	#
Sodium, Total	17.6	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	35	mg/L	5	SM2320B-2011	#
Alkalinity, Total	35	mg/L	5	SM2320B-2011	#
Chloride	68.6	mg/L	2.0	EPA 300.0	#
Nitrate-N	7.2	mg/L	1.0	EPA 300.0	#
pH	7.00	pH_Units		S4500HB-11	#
Specific Conductance	316	umhos/cm	1	SW846 9050A	#
Sulfate	7.5	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	178	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	0.85	mg/L	0.50	SW846 9060A	#
Turbidity	0.60	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	Field Blank	Collected	07/22/2022 12:25		
Lab Sample ID	3254467005	Lab Receipt	07/22/2022 13:55		
Compound	Result	Units	RDL	Method	Flag
VOLATILE ORGANICS					
Chloroform	10.8	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
pH	5.68	pH_Units		S4500HB-11	#
Specific Conductance	1	umhos/cm	1	SW846 9050A	#



Results

Client Sample ID	CWMP012W	Collected	07/22/2022 10:00
Lab Sample ID	3254467001	Lab Receipt	07/22/2022 13:55

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	64.87		Feet		Field	1	07/22/2022 10:00	BGS	D
pH, Field (SM4500B)	6.94		pH_Units		Field	1	07/22/2022 10:00	BGS	D
Specific Conductance, Field	519		umhos/cm	1	Field	1	07/22/2022 10:00	BGS	D
Temperature	18.22		Deg. C		Field	1	07/22/2022 10:00	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	32.1		mg/L	0.11	SW846 6010C	1	08/20/2022 12:33	SRT	J1
Iron, Total	42.1		mg/L	0.067	SW846 6010C	1	08/20/2022 12:33	SRT	J1
Magnesium, Total	8.4		mg/L	0.11	SW846 6010C	1	08/20/2022 12:33	SRT	J1
Manganese, Total	0.41		mg/L	0.0056	SW846 6010C	1	08/20/2022 12:33	SRT	J1
Potassium, Total	1.4		mg/L	0.56	SW846 6010C	1	08/20/2022 12:33	SRT	J1
Sodium, Total	13.3		mg/L	0.56	SW846 6010C	1	08/20/2022 12:33	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 18:57	DPC	E

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	112%	62 – 133	07/26/2022 18:57	
4-Bromofluorobenzene	460-00-4	99.1%	79 – 114	07/26/2022 18:57	
Dibromofluoromethane	1868-53-7	98.2%	78 – 116	07/26/2022 18:57	
Toluene-d8	2037-26-5	93.8%	76 – 127	07/26/2022 18:57	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	80		mg/L	5	SM2320B-2011	1	07/30/2022 17:04	BXD	B



Results

Client Sample ID	CWMP012W	Collected	07/22/2022 10:00
Lab Sample ID	3254467001	Lab Receipt	07/22/2022 13:55

WET CHEMISTRY (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Total	80	1	mg/L	5	SM2320B-2011	1	07/30/2022 17:04	BXD	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-09	10	07/26/2022 14:08	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/26/2022 12:03	KMS	A
Chloride	39.1		mg/L	2.0	EPA 300.0	2	07/22/2022 22:15	M1D	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/22/2022 22:15	M1D	B
Nitrate-N	9.1		mg/L	1.0	EPA 300.0	2	07/22/2022 22:15	M1D	B
pH	7.16	2	pH_Units		S4500HB-11	1	07/30/2022 17:04	BXD	B
Phenolics	0.03		mg/L	0.008	SW846 9066	2	08/01/2022 16:11	AKH	G
Specific Conductance	339		umhos/cm	1	SW846 9050A	1	08/02/2022 13:27	BXD	B
Sulfate	6.1		mg/L	2.0	EPA 300.0	2	07/22/2022 22:15	M1D	B
Total Dissolved Solids	206		mg/L	25	S2540C-11	1	07/26/2022 08:08	SMS	B
Total Organic Carbon (TOC)	1.7		mg/L	0.50	SW846 9060A	1	07/27/2022 01:53	PAG	E
Turbidity	270		NTU	0.30	SM2130B-2011	1	07/23/2022 02:17	LXZ	B



Results

Client Sample ID	CWMP002W	Collected	07/22/2022 10:35
Lab Sample ID	3254467002	Lab Receipt	07/22/2022 13:55

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	81.04		Feet		Field	1	07/22/2022 10:35	BGS	D
Elev Top MW Casing above MSL	525.81		Feet		Field	1	07/22/2022 10:35	BGS	D
Ground Water Elevation	444.77		ft/MSL		Field	1	07/22/2022 10:35	BGS	D
pH, Field (SM4500B)	6.78		pH_Units		Field	1	07/22/2022 10:35	BGS	D
Sample Depth	85.00		Feet		Field	1	07/22/2022 10:35	BGS	D
Specific Conductance, Field	640		umhos/cm	1	Field	1	07/22/2022 10:35	BGS	D
Temperature	14.26		Deg. C		Field	1	07/22/2022 10:35	BGS	D
Total Well Depth	100.00		Feet		Field	1	07/22/2022 10:35	BGS	D

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,1,2-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,1-Dichloroethane	2.0		ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,2,3-Trichloropropane	ND	ND	ug/L	2.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,2,4-Trichlorobenzene	ND	ND	ug/L	2.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,2-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,2-Dichloropropane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,3-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,3-Dichloropropene, Total	ND	ND	ug/L	2.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
1,4-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Bromodichloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Bromoform	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Bromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Carbon Tetrachloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Chlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Chlorodibromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Chloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Chloroform	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Chloromethane	1.3		ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Styrene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Trichlorofluoromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 19:19	DPC	H



Results

Client Sample ID	CWMP002W	Collected	07/22/2022 10:35
Lab Sample ID	3254467002	Lab Receipt	07/22/2022 13:55

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
SURROGATES									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			113%	62 – 133		07/26/2022 19:19		
4-Bromofluorobenzene	460-00-4			101%	79 – 114		07/26/2022 19:19		
Dibromofluoromethane	1868-53-7			101%	78 – 116		07/26/2022 19:19		
Toluene-d8	2037-26-5			95%	76 – 127		07/26/2022 19:19		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	60		mg/L	5	SM2320B-2011	1	07/30/2022 17:15	BXD	B
Alkalinity, Total	60	1	mg/L	5	SM2320B-2011	1	07/30/2022 17:15	BXD	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-09	10	07/26/2022 08:09	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/26/2022 12:03	KMS	A
Chloride	80.5	3	mg/L	2.0	EPA 300.0	2	07/22/2022 22:26	M1D	B
Fluoride	ND	ND,3	mg/L	0.20	EPA 300.0	2	07/22/2022 22:26	M1D	B
Nitrate-N	8.5	3	mg/L	1.0	EPA 300.0	2	07/22/2022 22:26	M1D	B
pH	6.89	2	pH_Units		S4500HB-11	1	07/30/2022 17:15	BXD	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	08/01/2022 16:15	AKH	G
Specific Conductance	424		umhos/cm	1	SW846 9050A	1	08/02/2022 13:27	BXD	B
Sulfate	15.2	3	mg/L	2.0	EPA 300.0	2	07/22/2022 22:26	M1D	B
Total Dissolved Solids	294		mg/L	25	S2540C-11	1	07/26/2022 08:08	SMS	B
Total Organic Carbon (TOC)	1.3		mg/L	0.50	SW846 9060A	1	07/27/2022 01:53	PAG	E
Turbidity	12		NTU	0.30	SM2130B-2011	1	07/23/2022 02:17	LXZ	B



Results

Client Sample ID	CWMP003W	Collected	07/22/2022 11:03
Lab Sample ID	3254467003	Lab Receipt	07/22/2022 13:55

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	94.78		Feet		Field	1	07/22/2022 11:03	BGS	D
Elev Top MW Casing above MSL	524.21		Feet		Field	1	07/22/2022 11:03	BGS	D
Ground Water Elevation	429.43		ft/MSL		Field	1	07/22/2022 11:03	BGS	D
pH, Field (SM4500B)	6.55		pH_Units		Field	1	07/22/2022 11:03	BGS	D
Sample Depth	100.00		Feet		Field	1	07/22/2022 11:03	BGS	D
Specific Conductance, Field	459		umhos/cm	1	Field	1	07/22/2022 11:03	BGS	D
Temperature	15.13		Deg. C		Field	1	07/22/2022 11:03	BGS	D
Total Well Depth	140.00		Feet		Field	1	07/22/2022 11:03	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	23.2		mg/L	0.11	SW846 6010C	1	08/20/2022 12:43	SRT	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	08/20/2022 12:43	SRT	J1
Magnesium, Total	8.0		mg/L	0.11	SW846 6010C	1	08/20/2022 12:43	SRT	J1
Manganese, Total	ND	ND	mg/L	0.0056	SW846 6010C	1	08/20/2022 12:43	SRT	J1
Potassium, Total	1.5		mg/L	0.56	SW846 6010C	1	08/20/2022 12:43	SRT	J1
Sodium, Total	19.9		mg/L	0.56	SW846 6010C	1	08/20/2022 12:43	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,1,2-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,1-Dichloroethane	1.5		ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,2,3-Trichloropropane	ND	ND	ug/L	2.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,2,4-Trichlorobenzene	ND	ND	ug/L	2.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,2-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,2-Dichloropropane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,3-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,3-Dichloropropene, Total	ND	ND	ug/L	2.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
1,4-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Bromodichloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Bromoform	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Bromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Carbon Tetrachloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Chlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Chlorodibromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Chloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Chloroform	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Chloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H



Results

Client Sample ID	CWMP003W	Collected	07/22/2022 11:03
Lab Sample ID	3254467003	Lab Receipt	07/22/2022 13:55

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Styrene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Trichlorofluoromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:16	PDK	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	112%	62 – 133	07/28/2022 04:16	
4-Bromofluorobenzene	460-00-4	98.9%	79 – 114	07/28/2022 04:16	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/28/2022 04:16	
Toluene-d8	2037-26-5	94.3%	76 – 127	07/28/2022 04:16	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	22		mg/L	5	SM2320B-2011	1	07/30/2022 17:25	BXD	B
Alkalinity, Total	22	1	mg/L	5	SM2320B-2011	1	07/30/2022 17:25	BXD	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-09	10	07/26/2022 19:15	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/26/2022 12:03	KMS	A
Chloride	87.1		mg/L	2.0	EPA 300.0	2	07/22/2022 20:31	M1D	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/22/2022 20:31	M1D	B
Nitrate-N	8.3		mg/L	1.0	EPA 300.0	2	07/22/2022 20:31	M1D	B
pH	6.70	2	pH_Units		S4500HB-11	1	07/30/2022 17:25	BXD	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	08/01/2022 16:34	AKH	G
Specific Conductance	354		umhos/cm	1	SW846 9050A	1	08/02/2022 13:27	BXD	B
Sulfate	7.5		mg/L	2.0	EPA 300.0	2	07/22/2022 20:31	M1D	B
Total Dissolved Solids	206		mg/L	25	S2540C-11	1	07/26/2022 08:08	SMS	B
Total Organic Carbon (TOC)	0.89		mg/L	0.50	SW846 9060A	1	07/27/2022 01:53	PAG	E
Turbidity	0.51		NTU	0.30	SM2130B-2011	1	07/23/2022 02:17	LXZ	B



Results

Client Sample ID	CWMP004W	Collected	07/22/2022 11:10
Lab Sample ID	3254467004	Lab Receipt	07/22/2022 13:55

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	101.98		Feet		Field	1	07/22/2022 11:10	BGS	D
Elev Top MW Casing above MSL	529.53		Feet		Field	1	07/22/2022 11:10	BGS	D
Ground Water Elevation	427.55		ft/MSL		Field	1	07/22/2022 11:10	BGS	D
pH, Field (SM4500B)	6.85		pH_Units		Field	1	07/22/2022 11:10	BGS	D
Sample Depth	130.00		Feet		Field	1	07/22/2022 11:10	BGS	D
Specific Conductance, Field	467		umhos/cm	1	Field	1	07/22/2022 11:10	BGS	D
Temperature	15.23		Deg. C		Field	1	07/22/2022 11:10	BGS	D
Total Well Depth	140.00		Feet		Field	1	07/22/2022 11:10	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	23.8		mg/L	0.11	SW846 6010C	1	08/20/2022 12:47	SRT	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	08/20/2022 12:47	SRT	J1
Magnesium, Total	7.4		mg/L	0.11	SW846 6010C	1	08/20/2022 12:47	SRT	J1
Manganese, Total	0.0087		mg/L	0.0056	SW846 6010C	1	08/20/2022 12:47	SRT	J1
Potassium, Total	1.4		mg/L	0.56	SW846 6010C	1	08/20/2022 12:47	SRT	J1
Sodium, Total	17.6		mg/L	0.56	SW846 6010C	1	08/20/2022 12:47	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,1,2-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,2,3-Trichloropropane	ND	ND	ug/L	2.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,2,4-Trichlorobenzene	ND	ND	ug/L	2.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,2-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,2-Dichloropropane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,3-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,3-Dichloropropene, Total	ND	ND	ug/L	2.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
1,4-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Bromodichloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Bromoform	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Bromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Carbon Tetrachloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Chlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Chlorodibromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Chloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Chloroform	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Chloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H



Results

Client Sample ID	CWMP004W	Collected	07/22/2022 11:10
Lab Sample ID	3254467004	Lab Receipt	07/22/2022 13:55

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Styrene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Trichlorofluoromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 04:38	PDK	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	112%	62 – 133	07/28/2022 04:38	
4-Bromofluorobenzene	460-00-4	98.8%	79 – 114	07/28/2022 04:38	
Dibromofluoromethane	1868-53-7	98.8%	78 – 116	07/28/2022 04:38	
Toluene-d8	2037-26-5	93.6%	76 – 127	07/28/2022 04:38	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	35		mg/L	5	SM2320B-2011	1	07/30/2022 17:36	BXD	B
Alkalinity, Total	35	1	mg/L	5	SM2320B-2011	1	07/30/2022 17:36	BXD	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-09	10	07/26/2022 08:50	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/26/2022 12:03	KMS	A
Chloride	68.6	4,5	mg/L	2.0	EPA 300.0	2	07/22/2022 20:41	M1D	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/22/2022 20:41	M1D	B
Nitrate-N	7.2	6,7	mg/L	1.0	EPA 300.0	2	07/22/2022 20:41	M1D	B
pH	7.00	2	pH_Units		S4500HB-11	1	07/30/2022 17:36	BXD	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	08/01/2022 16:37	AKH	G
Specific Conductance	316		umhos/cm	1	SW846 9050A	1	08/02/2022 13:27	BXD	B
Sulfate	7.5		mg/L	2.0	EPA 300.0	2	07/22/2022 20:41	M1D	B
Total Dissolved Solids	178		mg/L	25	S2540C-11	1	07/26/2022 08:08	SMS	B
Total Organic Carbon (TOC)	0.85		mg/L	0.50	SW846 9060A	1	07/27/2022 01:53	PAG	E
Turbidity	0.60		NTU	0.30	SM2130B-2011	1	07/23/2022 02:17	LXZ	B



Results

Client Sample ID	Field Blank	Collected	07/22/2022 12:25
Lab Sample ID	3254467005	Lab Receipt	07/22/2022 13:55

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	ND	ND	mg/L	0.11	SW846 6010C	1	08/20/2022 12:51	SRT	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	08/20/2022 12:51	SRT	J1
Magnesium, Total	ND	ND	mg/L	0.11	SW846 6010C	1	08/20/2022 12:51	SRT	J1
Manganese, Total	ND	ND	mg/L	0.0056	SW846 6010C	1	08/20/2022 12:51	SRT	J1
Potassium, Total	ND	ND	mg/L	0.56	SW846 6010C	1	08/20/2022 12:51	SRT	J1
Sodium, Total	ND	ND	mg/L	0.56	SW846 6010C	1	08/20/2022 12:51	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,1,2-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,2,3-Trichloropropane	ND	ND	ug/L	2.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,2,4-Trichlorobenzene	ND	ND	ug/L	2.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,2-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,2-Dichloropropane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,3-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,3-Dichloropropene, Total	ND	ND	ug/L	2.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
1,4-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Bromodichloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Bromoform	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Bromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Carbon Tetrachloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Chlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Chlorodibromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Chloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Chloroform	10.8		ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Chloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Styrene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Trichlorofluoromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2022 00:33	PDK	H



Results

Client Sample ID	Field Blank	Collected	07/22/2022 12:25
Lab Sample ID	3254467005	Lab Receipt	07/22/2022 13:55

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
SURROGATES									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			113%	62 – 133		07/28/2022 00:33		
4-Bromofluorobenzene	460-00-4			97.4%	79 – 114		07/28/2022 00:33		
Dibromofluoromethane	1868-53-7			99.2%	78 – 116		07/28/2022 00:33		
Toluene-d8	2037-26-5			92.3%	76 – 127		07/28/2022 00:33		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	ND	ND	mg/L	5	SM2320B-2011	1	07/30/2022 17:45	BXD	B
Alkalinity, Total	ND	ND,1	mg/L	5	SM2320B-2011	1	07/30/2022 17:45	BXD	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-09	1	07/26/2022 13:54	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/26/2022 12:03	KMS	A
Chloride	ND	ND	mg/L	2.0	EPA 300.0	2	07/22/2022 21:33	M1D	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/22/2022 21:33	M1D	B
Nitrate-N	ND	ND	mg/L	1.0	EPA 300.0	2	07/22/2022 21:33	M1D	B
pH	5.68	2	pH_Units		S4500HB-11	1	07/30/2022 17:45	BXD	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	08/01/2022 16:41	AKH	G
Specific Conductance	1		umhos/cm	1	SW846 9050A	1	08/02/2022 13:27	BXD	B
Sulfate	ND	ND	mg/L	2.0	EPA 300.0	2	07/22/2022 21:33	M1D	B
Total Dissolved Solids	ND	ND	mg/L	25	S2540C-11	1	07/26/2022 08:08	SMS	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	07/27/2022 01:53	PAG	E
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	07/23/2022 02:17	LXZ	B



Results

Client Sample ID	Trip Blank	Collected	07/22/2022 13:55
Lab Sample ID	3254467006	Lab Receipt	07/22/2022 13:55

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,1,2-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,2,3-Trichloropropane	ND	ND	ug/L	2.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,2,4-Trichlorobenzene	ND	ND	ug/L	2.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,2-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,2-Dichloropropane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,3-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,3-Dichloropropene, Total	ND	ND	ug/L	2.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
1,4-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Bromodichloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Bromoform	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Bromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Carbon Tetrachloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Chlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Chlorodibromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Chloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Chloroform	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Chloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Styrene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Trichlorofluoromethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2022 23:04	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	111%	62 – 133	07/27/2022 23:04	
4-Bromofluorobenzene	460-00-4	99.8%	79 – 114	07/27/2022 23:04	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/27/2022 23:04	
Toluene-d8	2037-26-5	94.4%	76 – 127	07/27/2022 23:04	



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3254467001	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	
3254467002	CWMP002W	Field	N/A	
		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	
3254467003	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	
3254467004	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	



Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3254467005	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	
3254467006	Trip Blank	SW846 8260B	N/A	



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3254467001	CWMP012W	N/A	N/A	N/A	ANN	Field	867703
		SW846 3015	867028	07/27/2022 02:36		SW846 6010C	872900
		N/A	N/A	N/A		SW846 8260B	866861
		N/A	N/A	N/A		ASTM D6919-09	866816
		N/A	N/A	N/A		EPA 300.0	866432
		N/A	N/A	N/A		EPA 410.4	866830
		N/A	N/A	N/A		S2540C-11	866613
		N/A	N/A	N/A		S4500HB-11	867826
		N/A	N/A	N/A		SM2130B-2011	866538
		N/A	N/A	N/A		SM2320B-2011	867826
		N/A	N/A	N/A		SW846 9050A	868207
		N/A	N/A	N/A		SW846 9060A	866938
3254467002	CWMP002W	420.4/9066	867994	08/01/2022 10:09	AKH	SW846 9066	867998
		N/A	N/A	N/A		Field	867703
		N/A	N/A	N/A		SW846 8260B	866861
		N/A	N/A	N/A		ASTM D6919-09	866651
		N/A	N/A	N/A		EPA 300.0	866432
		N/A	N/A	N/A		EPA 410.4	866830
		N/A	N/A	N/A		S2540C-11	866613
		N/A	N/A	N/A		S4500HB-11	867826
		N/A	N/A	N/A		SM2130B-2011	866538
		N/A	N/A	N/A		SM2320B-2011	867826
		N/A	N/A	N/A		SW846 9050A	868207
		N/A	N/A	N/A		SW846 9060A	866938
3254467003	CWMP003W	420.4/9066	867994	08/01/2022 10:09	AKH	SW846 9066	867998
		N/A	N/A	N/A		Field	867703
		SW846 3015	867028	07/27/2022 02:36		SW846 6010C	872900
		N/A	N/A	N/A		SW846 8260B	867233
		N/A	N/A	N/A		ASTM D6919-09	866686
		N/A	N/A	N/A		EPA 300.0	866432
		N/A	N/A	N/A		EPA 410.4	866830
		N/A	N/A	N/A		S2540C-11	866613
		N/A	N/A	N/A		S4500HB-11	867826
		N/A	N/A	N/A		SM2130B-2011	866538
		N/A	N/A	N/A		SM2320B-2011	867826
		N/A	N/A	N/A		SW846 9050A	868207
3254467004	CWMP004W	N/A	N/A	N/A	ANN	SW846 9060A	866938
		420.4/9066	867994	08/01/2022 10:09		SW846 9066	867998
		N/A	N/A	N/A		Field	867703
		SW846 3015	867028	07/27/2022 02:36		SW846 6010C	872900
		N/A	N/A	N/A		SW846 8260B	867233
		N/A	N/A	N/A		ASTM D6919-09	866651
		N/A	N/A	N/A		EPA 300.0	866432
		N/A	N/A	N/A		EPA 410.4	866830
		N/A	N/A	N/A		S2540C-11	866613
		N/A	N/A	N/A		S4500HB-11	867826
		N/A	N/A	N/A		SM2130B-2011	866538
		N/A	N/A	N/A		SM2320B-2011	867826



Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3254467005	Field Blank	SW846 3015	867028	07/27/2022 02:36	ANN	SW846 6010C	872900
		N/A	N/A	N/A		SW846 8260B	867233
		N/A	N/A	N/A		ASTM D6919-09	866816
		N/A	N/A	N/A		EPA 300.0	866432
		N/A	N/A	N/A		EPA 410.4	866830
		N/A	N/A	N/A		S2540C-11	866613
		N/A	N/A	N/A		S4500HB-11	867826
		N/A	N/A	N/A		SM2130B-2011	866538
		N/A	N/A	N/A		SM2320B-2011	867826
		N/A	N/A	N/A		SW846 9050A	868207
		N/A	N/A	N/A		SW846 9060A	866938
		420.4/9066	867994	08/01/2022 10:09		SW846 9066	867998
3254467006	Trip Blank	N/A	N/A	N/A		SW846 8260B	867233



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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 **Email:** dbrown@lcswwma.org

Fax? ☒ Y ☐ N **Fax:** (717) 397-9973

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time
1. CWMP012W	07/22/22	1000
2. CWMP002W	07/22/22	1035
3. CWMP003W	07/22/22	1103
4. CWMP004W	07/22/22	1110
5. Field Blank	07/22/22	1225
6. Trip Blank	07/22/22	1305
7		
8		
9		
10		

Project Comments:

LOGGED BY (signature):

REVIEWED BY (signature):

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1. <i>[Signature]</i>	07/22/22	1305	adli	7/22/22	1355
3					
5					
7					
9					

* G=Grab; C=Composite

**Matrix

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

ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

Rev 8/04

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

3254467

Logged By: KSB
PM: SJB



Receipt Information (page 1 of 1)

Cooler Temp: 4°C Therm ID: TH573

No. of Coolers: Y N Initial

Temp Taken By: CO

WO Temp (°C): 573

Therm ID: AS

Receipt Info Completed By: Y N

Cooler Custody Seal Intact: Y N

Sample Custody Seal Intact: Y N

Received on Ice: Y N

Cooler & Samples Intact: Y N

Correct Containers Provided: Y N

Sample Label/COC Agree: Y N

Adequate Sample Volumes: Y N

VOA Headspace Present: Y N

Voa Trip Blank: Y N

NIS 4 Days? Y N

Rad Screen (uCi): Y N

Courier/Tracking #: Y N

SDWA Compliance: Y N

PWSID: Y N

WV Containers 0.6°C: Y N

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

d e	Special Processing	State Samples Collected In
	USACE ☐ Navy ☐ ☐	☐ NY ☐ NJ ☒ PA ☐ NC ☐
DEP?	Sample Disposal Lab ☒ Special ☐	

N= Wastewater

Deliverables	Reportable to PADEP?	Sample Disposal
☐	Yes ☐	Lab ☒
☐	PWSID #	Special ☐
☐	EDDS: Format Type-	



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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 3rd QTR 2022 GWMP-FORM 19Q

Workorder 3253973

Report ID 185267 on 8/2/2022

Certificate of Analysis

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

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
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 Authority

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

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3253973001	CWMP016W	Ground Water	07/20/2022 12:55	07/20/2022 15:25	BGS	Analytical Laboratory Service
3253973002	CWMP009W	Ground Water	07/20/2022 13:36	07/20/2022 15:25	BGS	Analytical Laboratory Service



Reference

Notes

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

Standard Acronyms/Flags

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



Project Notations

Sample Notations

Lab ID

Sample ID

Result Notations

Notation Ref.

- 1

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
- 2

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.



Detected Results Summary

Client Sample ID	CWMP016W	Collected	07/20/2022 12:55		
Lab Sample ID	3253973001	Lab Receipt	07/20/2022 15:25		
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	12.15	Feet		Field	#
Dissolved Oxygen	9.15	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	311.97	Feet		Field	#
Flow Rate	2.07	gal/min		Field	#
Ground Water Elevation	299.82	ft/MSL		Field	#
Oxidation-Reduction Potential	290	mV		Field	#
pH, Field (SM4500B)	5.11	pH_Units		Field	#
Sample Depth	71.00	Feet		Field	#
Specific Conductance, Field	83	umhos/cm	1	Field	#
Temperature	12.35	Deg. C		Field	#
Total Well Depth	73.52	Feet		Field	#
Turbidity, Field	1	NTU	1	Field	#
Volume in Water Column	90.21	Gallons		Field	#
Water Level After Purge	20.34	Feet		Field	#
Well Volumes Purged	1.60	Vol		Field	#
METALS					
Calcium, Total	41.7	mg/L	0.11	SW846 6010C	#
Iron, Total	50.8	mg/L	0.067	SW846 6010C	#
Magnesium, Total	5.7	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.87	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.2	mg/L	0.56	SW846 6010C	#
Sodium, Total	11.8	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	9	mg/L	5	SM2320B-2011	#
Alkalinity, Total	9	mg/L	5	SM2320B-2011	#
Chloride	2.5	mg/L	2.0	EPA 300.0	#
Nitrate-N	2.3	mg/L	1.0	EPA 300.0	#
pH	6.89	pH_Units		S4500HB-11	#
Specific Conductance	76	umhos/cm	1	SW846 9050A	#
Sulfate	9.2	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	38	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	0.74	mg/L	0.50	SW846 9060A	#
Turbidity	5.5	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP009W			Collected	07/20/2022 13:36
Lab Sample ID	3253973002			Lab Receipt	07/20/2022 15:25
Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	9.34	Feet		Field	#
Dissolved Oxygen	0.12	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	404.20	Feet		Field	#
Flow Rate	1.51	gal/min		Field	#
Ground Water Elevation	394.86	ft/MSL		Field	#
Oxidation-Reduction Potential	-55	mV		Field	#
pH, Field (SM4500B)	6.13	pH_Units		Field	#
Sample Depth	16.00	Feet		Field	#
Specific Conductance, Field	3740	umhos/cm	1	Field	#
Temperature	15.20	Deg. C		Field	#
Total Well Depth	19.70	Feet		Field	#
Turbidity, Field	1	NTU	1	Field	#
Volume in Water Column	6.73	Gallons		Field	#
Water Level After Purge	10.96	Feet		Field	#
Well Volumes Purged	4.50	Vol		Field	#
METALS					
Calcium, Total	30.1	mg/L	0.11	SW846 6010C	#
Iron, Total	8.9	mg/L	0.067	SW846 6010C	#
Magnesium, Total	4.3	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.35	mg/L	0.0056	SW846 6010C	#
Potassium, Total	10.6	mg/L	0.56	SW846 6010C	#
Sodium, Total	2.8	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
Benzene	2.0	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	554	mg/L	50	SM2320B-2011	#
Alkalinity, Total	554	mg/L	50	SM2320B-2011	#
Ammonia-N	37.5	mg/L	0.100	ASTM D6919-09	#
Chemical Oxygen Demand (COD)	109	mg/L	15	EPA 410.4	#
Chloride	621	mg/L	25.0	EPA 300.0	#
pH	7.38	pH_Units		S4500HB-11	#
Phenolics	0.01	mg/L	0.004	SW846 9066	#
Specific Conductance	3400	umhos/cm	10	SW846 9050A	#
Total Dissolved Solids	1620	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	37.1	mg/L	5.0	SW846 9060A	#
Turbidity	42	NTU	0.30	SM2130B-2011	#



Results

Client Sample ID	CWMP016W	Collected	07/20/2022 12:55
Lab Sample ID	3253973001	Lab Receipt	07/20/2022 15:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	12.15		Feet		Field	1	07/20/2022 12:55	BGS	D
Dissolved Oxygen	9.15		mg/L	0.01	Field	1	07/20/2022 12:55	BGS	D
Elev Top MW Casing above MSL	311.97		Feet		Field	1	07/20/2022 12:55	BGS	D
Flow Rate	2.07		gal/min		Field	1	07/20/2022 12:55	BGS	D
Ground Water Elevation	299.82		ft/MSL		Field	1	07/20/2022 12:55	BGS	D
Oxidation-Reduction Potential	290		mV		Field	1	07/20/2022 12:55	BGS	D
pH, Field (SM4500B)	5.11		pH_Units		Field	1	07/20/2022 12:55	BGS	D
Sample Depth	71.00		Feet		Field	1	07/20/2022 12:55	BGS	D
Specific Conductance, Field	83		umhos/cm	1	Field	1	07/20/2022 12:55	BGS	D
Temperature	12.35		Deg. C		Field	1	07/20/2022 12:55	BGS	D
Total Well Depth	73.52		Feet		Field	1	07/20/2022 12:55	BGS	D
Turbidity, Field	1		NTU	1	Field	1	07/20/2022 12:55	BGS	D
Volume in Water Column	90.21		Gallons		Field	1	07/20/2022 12:55	BGS	D
Water Level After Purge	20.34		Feet		Field	1	07/20/2022 12:55	BGS	D
Well Volumes Purged	1.60		Vol		Field	1	07/20/2022 12:55	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	41.7		mg/L	0.11	SW846 6010C	1	07/30/2022 15:52	SRT	J1
Iron, Total	50.8		mg/L	0.067	SW846 6010C	1	07/30/2022 15:52	SRT	J1
Magnesium, Total	5.7		mg/L	0.11	SW846 6010C	1	07/30/2022 15:52	SRT	J1
Manganese, Total	0.87		mg/L	0.0056	SW846 6010C	1	07/30/2022 15:52	SRT	J1
Potassium, Total	1.2		mg/L	0.56	SW846 6010C	1	07/30/2022 15:52	SRT	J1
Sodium, Total	11.8		mg/L	0.56	SW846 6010C	1	07/30/2022 15:52	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 16:44	DPC	H



Results

Client Sample ID	CWMP016W	Collected	07/20/2022 12:55
Lab Sample ID	3253973001	Lab Receipt	07/20/2022 15:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
SURROGATES									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			111%	62 – 133		07/26/2022 16:44		
4-Bromofluorobenzene	460-00-4			100%	79 – 114		07/26/2022 16:44		
Dibromofluoromethane	1868-53-7			98.2%	78 – 116		07/26/2022 16:44		
Toluene-d8	2037-26-5			92.6%	76 – 127		07/26/2022 16:44		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	9		mg/L	5	SM2320B-2011	1	07/22/2022 17:14	BXD	B
Alkalinity, Total	9	1	mg/L	5	SM2320B-2011	1	07/22/2022 17:14	BXD	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-09	10	07/25/2022 20:45	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/22/2022 12:50	KMS	A
Chloride	2.5		mg/L	2.0	EPA 300.0	2	07/21/2022 15:25	GJB	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/21/2022 15:25	GJB	B
Nitrate-N	2.3		mg/L	1.0	EPA 300.0	2	07/21/2022 15:25	GJB	B
pH	6.89	2	pH_Units		S4500HB-11	1	07/22/2022 17:14	BXD	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	08/01/2022 19:44	AKH	G
Specific Conductance	76		umhos/cm	1	SW846 9050A	1	07/29/2022 16:18	BXD	B
Sulfate	9.2		mg/L	2.0	EPA 300.0	2	07/21/2022 15:25	GJB	B
Total Dissolved Solids	38		mg/L	25	S2540C-11	1	07/22/2022 09:07	SMS	B
Total Organic Carbon (TOC)	0.74		mg/L	0.50	SW846 9060A	1	07/26/2022 00:57	PAG	E
Turbidity	5.5		NTU	0.30	SM2130B-2011	1	07/21/2022 04:17	LXZ	B



Results

Client Sample ID	CWMP009W	Collected	07/20/2022 13:36
Lab Sample ID	3253973002	Lab Receipt	07/20/2022 15:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	9.34		Feet		Field	1	07/20/2022 13:36	BGS	D
Dissolved Oxygen	0.12		mg/L	0.01	Field	1	07/20/2022 13:36	BGS	D
Elev Top MW Casing above MSL	404.20		Feet		Field	1	07/20/2022 13:36	BGS	D
Flow Rate	1.51		gal/min		Field	1	07/20/2022 13:36	BGS	D
Ground Water Elevation	394.86		ft/MSL		Field	1	07/20/2022 13:36	BGS	D
Oxidation-Reduction Potential	-55		mV		Field	1	07/20/2022 13:36	BGS	D
pH, Field (SM4500B)	6.13		pH_Units		Field	1	07/20/2022 13:36	BGS	D
Sample Depth	16.00		Feet		Field	1	07/20/2022 13:36	BGS	D
Specific Conductance, Field	3740		umhos/cm	1	Field	1	07/20/2022 13:36	BGS	D
Temperature	15.20		Deg. C		Field	1	07/20/2022 13:36	BGS	D
Total Well Depth	19.70		Feet		Field	1	07/20/2022 13:36	BGS	D
Turbidity, Field	1		NTU	1	Field	1	07/20/2022 13:36	BGS	D
Volume in Water Column	6.73		Gallons		Field	1	07/20/2022 13:36	BGS	D
Water Level After Purge	10.96		Feet		Field	1	07/20/2022 13:36	BGS	D
Well Volumes Purged	4.50		Vol		Field	1	07/20/2022 13:36	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	30.1		mg/L	0.11	SW846 6010C	1	07/30/2022 15:55	SRT	J1
Iron, Total	8.9		mg/L	0.067	SW846 6010C	1	07/30/2022 15:55	SRT	J1
Magnesium, Total	4.3		mg/L	0.11	SW846 6010C	1	07/30/2022 15:55	SRT	J1
Manganese, Total	0.35		mg/L	0.0056	SW846 6010C	1	07/30/2022 15:55	SRT	J1
Potassium, Total	10.6		mg/L	0.56	SW846 6010C	1	07/30/2022 15:55	SRT	J1
Sodium, Total	2.8		mg/L	0.56	SW846 6010C	1	07/30/2022 15:55	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
Benzene	2.0		ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/26/2022 17:06	DPC	H



Results

Client Sample ID	CWMP009W	Collected	07/20/2022 13:36
Lab Sample ID	3253973002	Lab Receipt	07/20/2022 15:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
SURROGATES									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			115%	62 – 133		07/26/2022 17:06		
4-Bromofluorobenzene	460-00-4			101%	79 – 114		07/26/2022 17:06		
Dibromofluoromethane	1868-53-7			102%	78 – 116		07/26/2022 17:06		
Toluene-d8	2037-26-5			95.7%	76 – 127		07/26/2022 17:06		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	554		mg/L	50	SM2320B-2011	10	07/29/2022 15:55	BXD	B
Alkalinity, Total	554	1	mg/L	50	SM2320B-2011	10	07/29/2022 15:55	BXD	B
Ammonia-N	37.5		mg/L	0.100	ASTM D6919-09	10	07/25/2022 20:31	NML	A
Chemical Oxygen Demand (COD)	109		mg/L	15	EPA 410.4	1	07/22/2022 12:50	KMS	A
Chloride	621		mg/L	25.0	EPA 300.0	25	07/26/2022 21:06	M1D	B
Fluoride	ND	ND	mg/L	1.0	EPA 300.0	10	07/21/2022 15:35	GJB	B
Nitrate-N	ND	ND	mg/L	5.0	EPA 300.0	10	07/21/2022 15:35	GJB	B
pH	7.38	2	pH_Units		S4500HB-11	1	07/22/2022 17:25	BXD	B
Phenolics	0.01		mg/L	0.004	SW846 9066	1	08/01/2022 20:04	AKH	G
Specific Conductance	3400		umhos/cm	10	SW846 9050A	10	07/29/2022 16:18	BXD	B
Sulfate	ND	ND	mg/L	10.0	EPA 300.0	10	07/21/2022 15:35	GJB	B
Total Dissolved Solids	1620		mg/L	25	S2540C-11	1	07/22/2022 09:07	SMS	B
Total Organic Carbon (TOC)	37.1		mg/L	5.0	SW846 9060A	10	07/26/2022 00:57	PAG	E
Turbidity	42		NTU	0.30	SM2130B-2011	1	07/21/2022 04:17	LXZ	B



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3253973001	CWMP016W	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	
3253973002	CWMP009W	Field	N/A	
		SW846 6010C	SW846 3015	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	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	



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3253973001	CWMP016W	N/A	N/A	N/A	ANN	Field	867703
		SW846 3015	866991	07/26/2022 23:07		SW846 6010C	867721
		N/A	N/A	N/A		SW846 8260B	866861
		N/A	N/A	N/A		ASTM D6919-09	866372
		N/A	N/A	N/A		EPA 300.0	866048
		N/A	N/A	N/A		EPA 410.4	866375
		N/A	N/A	N/A		S2540C-11	865964
		N/A	N/A	N/A		S4500HB-11	866414
		N/A	N/A	N/A		SM2130B-2011	865957
		N/A	N/A	N/A		SM2320B-2011	866414
		N/A	N/A	N/A		SW846 9050A	867672
		N/A	N/A	N/A		SW846 9060A	866088
		420.4/9066	866126	07/22/2022 07:14		SW846 9066	867998
3253973002	CWMP009W	N/A	N/A	N/A	ANN	Field	867703
		SW846 3015	866991	07/26/2022 23:07		SW846 6010C	867721
		N/A	N/A	N/A		SW846 8260B	866861
		N/A	N/A	N/A		ASTM D6919-09	866372
		N/A	N/A	N/A		EPA 300.0	866048
		N/A	N/A	N/A		EPA 300.0	866889
		N/A	N/A	N/A		EPA 410.4	866375
		N/A	N/A	N/A		S2540C-11	865964
		N/A	N/A	N/A		S4500HB-11	866414
		N/A	N/A	N/A		SM2130B-2011	865957
		N/A	N/A	N/A		SM2320B-2011	867673
		N/A	N/A	N/A		SW846 9050A	867672
		N/A	N/A	N/A		SW846 9060A	866088
		420.4/9066	866126	07/22/2022 07:14		SW846 9066	867998

3253973
Logged By: KSB
PH: SJB



COC #
ALS Q

Generated by ALS

CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.

301 Filling Mill Road • Middletown, PA 17057 • 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/ID: Creswell/GWMP Form 19Q Wells
Bill To: Lancaster County Solid Waste MA

8/2/2022 4:23 PM

Temp Taken By: AMRF
WO Temp (°C): 56.9
Therm ID: AMRF
Receipt Info Completed By: AMRF
Cooler Custody Seal Intact: Y N
Sample Custody Seal Intact: Y N
Received on Ice: Y N
Cooler & Samples Intact: Y N
Correct Containers Provided: Y N
Sample Label/COC Agree: Y N
Adequate Sample Volumes: Y N
VOA Headspace Present: Y N
VOA Trip Blank: Y N
NIS 4 Days?: Y N
Rad Screen (uCi): Y N
Courier/Tracking #: Y N

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

Temp Temp (°C): 56.9
Therm ID: AMRF
Receipt Info Completed By: AMRF
Cooler Custody Seal Intact: Y N
Sample Custody Seal Intact: Y N
Received on Ice: Y N
Cooler & Samples Intact: Y N
Correct Containers Provided: Y N
Sample Label/COC Agree: Y N
Adequate Sample Volumes: Y N
VOA Headspace Present: Y N
VOA Trip Blank: Y N
NIS 4 Days?: Y N
Rad Screen (uCi): Y N
Courier/Tracking #: Y N

Temp Temp (°C): 56.9
Therm ID: AMRF
Receipt Info Completed By: AMRF
Cooler Custody Seal Intact: Y N
Sample Custody Seal Intact: Y N
Received on Ice: Y N
Cooler & Samples Intact: Y N
Correct Containers Provided: Y N
Sample Label/COC Agree: Y N
Adequate Sample Volumes: Y N
VOA Headspace Present: Y N
VOA Trip Blank: Y N
NIS 4 Days?: Y N
Rad Screen (uCi): Y N
Courier/Tracking #: Y N

Temp Temp (°C): 56.9
Therm ID: AMRF
Receipt Info Completed By: AMRF
Cooler Custody Seal Intact: Y N
Sample Custody Seal Intact: Y N
Received on Ice: Y N
Cooler & Samples Intact: Y N
Correct Containers Provided: Y N
Sample Label/COC Agree: Y N
Adequate Sample Volumes: Y N
VOA Headspace Present: Y N
VOA Trip Blank: Y N
NIS 4 Days?: Y N
Rad Screen (uCi): Y N
Courier/Tracking #: Y N

Temp Temp (°C): 56.9
Therm ID: AMRF
Receipt Info Completed By: AMRF
Cooler Custody Seal Intact: Y N
Sample Custody Seal Intact: Y N
Received on Ice: Y N
Cooler & Samples Intact: Y N
Correct Containers Provided: Y N
Sample Label/COC Agree: Y N
Adequate Sample Volumes: Y N
VOA Headspace Present: Y N
VOA Trip Blank: Y N
NIS 4 Days?: Y N
Rad Screen (uCi): Y N
Courier/Tracking #: Y N

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Therm ID: AMRF
Receipt Info Completed By: AMRF
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