



Date Prepared/Revised
02/24/2022

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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP30RW

X	Well	Spring	Stream	Other
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Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 15.52 "

Longitude: 76 ° 27 ' 26.8 "

Depth to Water Level: 34.94 ft

Measured from: Land Surface X TOC

Casing Stickup: 2.20 ft

Elevation of Water Level: 527.36 ft./MSL

Sampling Depth: 85 ft

Volume of Water Column:	80.86	gal
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Total Well Depth: 90 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X 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): 11/3/2021

Sample Collection Time: 10:41

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): 3210346001 Final Lab Analysis CompletionDate: 11/18/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP30RW

Sample Date 11/3/2021

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	D6919-09
BICARBONATE ALKALINITY	30	SM20-2320B
CALCIUM, TOTAL	32.6	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	203 E	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	610	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	16.6	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	2000	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	6	EPA 300
pH-FIELD (SU)	5.19	FIELD
pH-LAB (SU)	7.35	SM20-4500HB
POTASSIUM, TOTAL	5.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	89.7	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	992	FIELD
SPEC. COND., LAB (umhos/cm)	369	SW846 9050A
SULFATE	26.6	EPA 300
ALKALINITY	30	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	494	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	9.7	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 101389

Monitoring Point No. FFMP30RW

Sample Date 11/3/2021

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	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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Site Name: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP04AW

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 15.4 "

Longitude: 76 ° 27 ' 26.58 "

Depth to Water Level: 35.71 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.52 ft

Elevation of Water Level: 525.01 ft./MSL

Sampling Depth: 146 ft

Volume of Water Column: 390.38 gal

Total Well Depth: 301.52 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 0.7

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 11/3/2021

Sample Collection Time: 11:56

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): 3210346002 Final Lab Analysis CompletionDate: 11/18/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP04AW

Sample Date 11/3/2021

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	D6919-09
BICARBONATE ALKALINITY	172	SM20-2320B
CALCIUM, TOTAL	153	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	322 E	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	27.3	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	200	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.42	EPA 300
pH-FIELD (SU)	7.04	FIELD
pH-LAB (SU)	8.2	SM20-4500HB
POTASSIUM, TOTAL	2.7	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	90.1	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	2101	FIELD
SPEC. COND., LAB (umhos/cm)	1730	SW846 9050A
SULFATE	49.6	EPA 300
ALKALINITY	172	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	982	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.32	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 101389

Monitoring Point No. FFMP04AW

Sample Date 11/3/2021

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	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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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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP036W ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 16.03 " Longitude: 76 ° 26 ' 57.28 "

Depth to Water Level: 35.6 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.91 ft Elevation of Water Level: 442.63 ft./MSL

Sampling Depth: 135 ft Volume of Water Column: 153.33 gal

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

Well Purged: ☒ Yes ☐ No Well Volumes Purged: 0.6

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 11/3/2021 Sample Collection Time: 13:25

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): 3210346003 Final Lab Analysis Completion Date: 11/18/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP036W

Sample Date 11/3/2021

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	D6919-09
BICARBONATE ALKALINITY	70	SM20-2320B
CALCIUM, TOTAL	35.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	31.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	3200	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	4.1	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	120	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	8.12	FIELD
pH-LAB (SU)	8.12	SM20-4500HB
POTASSIUM, TOTAL	1.8	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	14.4	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	400	FIELD
SPEC. COND., LAB (umhos/cm)	344	SW846 9050A
SULFATE	21.4	EPA 300
ALKALINITY	70	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	156	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	39.1	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

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

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

Remaining quarterly samples only require total metals analysis.

I.D. No 101389

Monitoring Point No. FFMP036W

Sample Date 11/3/2021

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

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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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP035W ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 15.95 " Longitude: 76 ° 26 ' 57.26 "

Depth to Water Level: 42.59 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.45 ft Elevation of Water Level: 434.97 ft./MSL

Sampling Depth: 65 ft Volume of Water Column: 40.26 gal

Total Well Depth: 70 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: 0.6

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 11/3/2021 Sample Collection Time: 14:30

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): 3210346004 Final Lab Analysis Completion Date: 11/20/2021

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP035W

Sample Date 11/3/2021

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	D6919-09
BICARBONATE ALKALINITY	100	SM20-2320B
CALCIUM, TOTAL	118	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	294 E	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	75	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	29	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	390	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	4.6	EPA 300
pH-FIELD (SU)	6.4	FIELD
pH-LAB (SU)	8.02	SM20-4500HB
POTASSIUM, TOTAL	6.8	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	92.4	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1884	FIELD
SPEC. COND., LAB (umhos/cm)	1550	SW846 9050A
SULFATE	52.4	EPA 300
ALKALINITY	100	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	882	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.2	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	1.22	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 101389

Monitoring Point No. FFMP035W

Sample Date 11/3/2021

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	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
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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: FFMP029W

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 12.93 "

Longitude: 76 ° 27 ' 0.67 "

Depth to Water Level: 38.02 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.00 ft

Elevation of Water Level: 439.28 ft./MSL

Sampling Depth: 55 ft

Volume of Water Column: 30.08 gal

Total Well Depth: 58.5 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): 11/3/2021

Sample Collection Time: 15:27

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): 3210346005 Final Lab Analysis CompletionDate: 11/18/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP029W

Sample Date 11/3/2021

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ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	D6919-09
BICARBONATE ALKALINITY	15	SM20-2320B
CALCIUM, TOTAL	15.9	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	64.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	11.3	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	35	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	3.8	EPA 300
pH-FIELD (SU)	4.85	FIELD
pH-LAB (SU)	6.94	SM20-4500HB
POTASSIUM, TOTAL	2.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	25.7	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	436	FIELD
SPEC. COND., LAB (umhos/cm)	375	SW846 9050A
SULFATE	13.4	EPA 300
ALKALINITY	15	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	220	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.38	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 101389

Monitoring Point No. FFMP029W

Sample Date 11/3/2021

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	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
02/24/2022

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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP019W

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

Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 11.58 "

Longitude: 76° 27' 5.75"

Depth to Water Level: 26.81 ft

Measured from: Land Surface X TOC

Casing Stickup: 1.79 ft

Elevation of Water Level: 445.14 ft./MSL

Sampling Depth: 49 ft

Volume of Water Column: 69.18 gal

Total Well Depth: 132.79 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X Yes No

Well Volumes Purged: 2.1

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 11/4/2021

Sample Collection Time: 10:23

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): 3210476001 Final Lab Analysis CompletionDate: 12/1/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP019W

Sample Date 11/4/2021

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	D6919-09
BICARBONATE ALKALINITY	61	SM20-2320B
CALCIUM, TOTAL	62	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	86.8	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	6.3	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	5.6 ND	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.39	FIELD
pH-LAB (SU)	7.95	SM20-4500HB
POTASSIUM, TOTAL	1.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	13.3	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	659	FIELD
SPEC. COND., LAB (umhos/cm)	583	SW846 9050A
SULFATE	21.3	EPA 300
ALKALINITY	61	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	346	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.8	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	1.55	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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

Remaining quarterly samples only require total metals analysis.

I.D. No 101389

Monitoring Point No. FFMP019W

Sample Date 11/4/2021

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	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
02/24/2022

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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP018W

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 11.62 "

Longitude: 76 ° 27 ' 5.68 "

Depth to Water Level: 25.99 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.46 ft

Elevation of Water Level: 446.21 ft./MSL

Sampling Depth: 40 ft

Volume of Water Column: 16.61 gal

Total Well Depth: 51.43 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): 11/4/2021

Sample Collection Time: 11:15

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): 3210476002 Final Lab Analysis CompletionDate: 12/1/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP018W

Sample Date 11/4/2021

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	D6919-09
BICARBONATE ALKALINITY	19	SM20-2320B
CALCIUM, TOTAL	32.8	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	114	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	120	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	18.3	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	230	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	5.2	EPA 300
pH-FIELD (SU)	5.03	FIELD
pH-LAB (SU)	7.03	SM20-4500HB
POTASSIUM, TOTAL	4.8	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	39.1	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	780	FIELD
SPEC. COND., LAB (umhos/cm)	725	SW846 9050A
SULFATE	38.5	EPA 300
ALKALINITY	19	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	392	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.88	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 101389

Monitoring Point No. FFMP018W

Sample Date 11/4/2021

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	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
02/24/2022

DEP USE ONLY

Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP033W

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

Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 31.09 "

Longitude: 76° 27' 4.98"

Depth to Water Level: 18.78 ft

Measured from: Land Surface X TOC

Casing Stickup: 0.49 ft

Elevation of Water Level: 497.74 ft./MSL

Sampling Depth: 79 ft

Volume of Water Column:	113.41	gal
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Total Well Depth: 96 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X Yes No

Well Volumes Purged: 0.9

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 11/4/2021

Sample Collection Time: 12:33

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): 3210476003 Final Lab Analysis CompletionDate: 12/1/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP033W

Sample Date 11/4/2021

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	0.574	D6919-09
BICARBONATE ALKALINITY	41	SM20-2320B
CALCIUM, TOTAL	30.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	53.4	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	7100	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	10.9	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	460	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	10.7	EPA 300
pH-FIELD (SU)	5.76	FIELD
pH-LAB (SU)	7.31	SM20-4500HB
POTASSIUM, TOTAL	2.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	16	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	537	FIELD
SPEC. COND., LAB (umhos/cm)	437	SW846 9050A
SULFATE	5.9	EPA 300
ALKALINITY	41	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	296	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	8.64	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 101389

Monitoring Point No. FFMP033W

Sample Date 11/4/2021

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	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
02/24/2022

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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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP034W

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: _____

Sampling Point: Latitude: _____ ° _____ ' _____ "

Longitude: _____ ° _____ ' _____ "

Depth to Water Level: 9.79 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: _____ ft

Elevation of Water Level: 463.09 ft./MSL

Sampling Depth: 25.85 ft

Volume of Water Column: _____ gal

Total Well Depth: 121 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 0.5

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 11/4/2021

Sample Collection Time: 13:57

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): 3210476004 Final Lab Analysis Completion Date: 12/1/2021

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP034W

Sample Date 11/4/2021

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	D6919-09
BICARBONATE ALKALINITY	36	SM20-2320B
CALCIUM, TOTAL	62.6	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	174	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	1300	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	23.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	120	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	9	EPA 300
pH-FIELD (SU)	5.7	FIELD
pH-LAB (SU)	7.36	SM20-4500HB
POTASSIUM, TOTAL	3.2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	47.9	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1139	FIELD
SPEC. COND., LAB (umhos/cm)	959	SW846 9050A
SULFATE	34	EPA 300
ALKALINITY	36	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	536	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	18.6	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 101389

Monitoring Point No. FFMP034W

Sample Date 11/4/2021

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	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
02/24/2022

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**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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP02SW

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 27.9 "

Longitude: 76 ° 27 ' 1.58 "

Depth to Water Level: 14.79 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: ft

Elevation of Water Level: 495.11 ft./MSL

Sampling Depth: 19 ft

Volume of Water Column: gal

Total Well Depth: 25 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 2.3

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 11/4/2021

Sample Collection Time: 14:28

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): 3210476005 Final Lab Analysis Completion Date: 12/1/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP02SW

Sample Date 11/4/2021

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	D6919-09
BICARBONATE ALKALINITY	21	SM20-2320B
CALCIUM, TOTAL	23.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	105	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	1300	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	9.2	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	63	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	10.7	EPA 300
pH-FIELD (SU)	5.46	FIELD
pH-LAB (SU)	7.2	SM20-4500HB
POTASSIUM, TOTAL	5.5	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	79.6	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	679	FIELD
SPEC. COND., LAB (umhos/cm)	655	SW846 9050A
SULFATE	31	EPA 300
ALKALINITY	21	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	334	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.8	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	25.6	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 101389

Monitoring Point No. FFMP02SW

Sample Date 11/4/2021

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	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
02/24/2022

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MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP02DW

X	Well	Spring	Stream	Other
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Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 27.74 "

Longitude: 76 ° 27 ' 1.49 "

Depth to Water Level: 20.71 ft

Measured from: Land Surface X TOC

Casing Stickup: _____ ft

Elevation of Water Level: 488.89 ft./MSL

Sampling Depth: 120 ft

Volume of Water Column: _____ gal

Total Well Depth: 152 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X Yes No

Well Volumes Purged: 0.4

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 11/4/2021

Sample Collection Time: 15:37

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): 3210476006 Final Lab Analysis CompletionDate: 12/1/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP02DW

Sample Date 11/4/2021

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	0.117	D6919-09
BICARBONATE ALKALINITY	96	SM20-2320B
CALCIUM, TOTAL	136	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	443 E	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	120	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	23.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	500	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	6.3	EPA 300
pH-FIELD (SU)	7.48	FIELD
pH-LAB (SU)	8.1	SM20-4500HB
POTASSIUM, TOTAL	2.5	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	150	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	2462	FIELD
SPEC. COND., LAB (umhos/cm)	2000	SW846 9050A
SULFATE	36.2	EPA 300
ALKALINITY	96	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	1220	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	1.41	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 101389

Monitoring Point No. FFMP02DW

Sample Date 11/4/2021

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	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
02/24/2022

DEP USE ONLY

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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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP015W

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 36.43 "

Longitude: 76 ° 27 ' 10.82 "

Depth to Water Level: 63.16 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.90 ft

Elevation of Water Level: 513.24 ft./MSL

Sampling Depth: 135 ft

Volume of Water Column: 125.92 gal

Total Well Depth: 148.9 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 1.1

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 11/2/2021

Sample Collection Time: 11:08

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): 3210504001 Final Lab Analysis CompletionDate: 11/22/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP015W

Sample Date 11/2/2021

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	D6919-09
BICARBONATE ALKALINITY	17	SM20-2320B
CALCIUM, TOTAL	23.4	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	42.1	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	33.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	72	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN		EPA 300
pH-FIELD (SU)	5.28	FIELD
pH-LAB (SU)	76.96	SM20-4500HB
POTASSIUM, TOTAL	2.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	25.6	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	986	FIELD
SPEC. COND., LAB (umhos/cm)	725	SW846 9050A
SULFATE	30.5	EPA 300
ALKALINITY	17	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	366	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.72	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.27	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 101389

Monitoring Point No. FFMP015W

Sample Date 11/2/2021

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	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
02/24/2022

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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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP03AW

X	Well	Spring	Stream	Other
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Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 24.05 "

Longitude: 76° 27' 30.58"

Depth to Water Level: 52.59 ft

Measured from: Land Surface X TOC

Casing Stickup: 1.20 ft

Elevation of Water Level: 538.31 ft./MSL

Sampling Depth: 130 ft

Volume of Water Column:	138.95	gal
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Total Well Depth: 147.2 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X Yes No

Well Volumes Purged: 0.7

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 11/2/2021

Sample Collection Time: 12:26

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): 3210504002 Final Lab Analysis CompletionDate: 12/2/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP03AW

Sample Date 11/2/2021

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	D6919-09
BICARBONATE ALKALINITY	15	SM20-2320B
CALCIUM, TOTAL	22	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	34.7	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	13.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	310	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	22.3	EPA 300
pH-FIELD (SU)	4.96	FIELD
pH-LAB (SU)	6.99	SM20-4500HB
POTASSIUM, TOTAL	1.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	13.3	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	566	FIELD
SPEC. COND., LAB (umhos/cm)	422	SW846 9050A
SULFATE	2.9	EPA 300
ALKALINITY	15	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	236	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.59	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 101389

Monitoring Point No. FFMP03AW

Sample Date 11/2/2021

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	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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Facility ID (as issued by DEP): 101389

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: FFMP005W

X	Well	Spring	Stream	Other
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Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 10.67 "

Longitude: 76° 27' 21.3"

Depth to Water Level: 63.72 ft

Measured from: Land Surface X TOC

Casing Stickup: 1.70 ft

Elevation of Water Level: 473.68 ft./MSL

Sampling Depth: 135 ft

Volume of Water Column:	126.72	gal
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Total Well Depth: 150 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: X Yes No

Well Volumes Purged: 1.0

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 11/2/2021

Sample Collection Time: 13:53

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): 3210504003 Final Lab Analysis CompletionDate: 11/22/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP005W

Sample Date 11/2/2021

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	D6919-09
BICARBONATE ALKALINITY	48	SM20-2320B
CALCIUM, TOTAL	70.8	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	193	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	18.9	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	160	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	2.3	EPA 300
pH-FIELD (SU)	5.31	FIELD
pH-LAB (SU)	7.58	SM20-4500HB
POTASSIUM, TOTAL	3.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	47.1	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1495	FIELD
SPEC. COND., LAB (umhos/cm)	1070	SW846 9050A
SULFATE	67.5	EPA 300
ALKALINITY	48	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	584	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.7	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.84	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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

Remaining quarterly samples only require total metals analysis.

I.D. No 101389

Monitoring Point No. FFMP005W

Sample Date 11/2/2021

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	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
02/24/2022

DEP USE ONLY

Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP26RW

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 11.03 "

Longitude: 76 ° 27 ' 20.3 "

Depth to Water Level: 75.22 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 3.30 ft

Elevation of Water Level: 472.18 ft./MSL

Sampling Depth: 105 ft

Volume of Water Column: 56.95 gal

Total Well Depth: 114 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 1.3

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 11/2/2021

Sample Collection Time: 15:11

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): 3210504004 Final Lab Analysis CompletionDate: 11/22/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP26RW

Sample Date 11/2/2021

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	D6919-09
BICARBONATE ALKALINITY	55	SM20-2320B
CALCIUM, TOTAL	81.7	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	169	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	17.2	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	790	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.96	EPA 300
pH-FIELD (SU)	5.49	FIELD
pH-LAB (SU)	7.57	SM20-4500HB
POTASSIUM, TOTAL	7.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	57	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1466	FIELD
SPEC. COND., LAB (umhos/cm)	1080	SW846 9050A
SULFATE	98.1	EPA 300
ALKALINITY	55	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	548	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.43	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 101389

Monitoring Point No. FFMP26RW

Sample Date 11/2/2021

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	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
02/24/2022

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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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP017W

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 8.5 "

Longitude: 76 ° 27 ' 6.17 "

Depth to Water Level: 40.45 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.00 ft

Elevation of Water Level: 440.25 ft./MSL

Sampling Depth: 135 ft

Volume of Water Column: 161.63 gal

Total Well Depth: 150.5 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 0.8

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 11/5/2021

Sample Collection Time: 9:47

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): 3211130001 Final Lab Analysis CompletionDate: 12/3/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP017W

Sample Date 11/5/2021

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	0.226	D6919-09
BICARBONATE ALKALINITY	131	SM20-2320B
CALCIUM, TOTAL	98.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	299 E	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	39.4	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	1600	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	1.8	EPA 300
pH-FIELD (SU)	5.91	FIELD
pH-LAB (SU)	7.76	SM20-4500HB
POTASSIUM, TOTAL	7.9	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	92.8	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1871	FIELD
SPEC. COND., LAB (umhos/cm)	1590	SW846 9050A
SULFATE	77.2	EPA 300
ALKALINITY	131	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	802	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2.5	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.14	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 101389

Monitoring Point No. FFMP017W

Sample Date 11/5/2021

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	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
02/24/2022

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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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP031W

X	Well	Spring	Stream	Other
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X	Upgradient/Upstream	Downgradient/Downstream
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
15	1	1
16	1	1
17	1	1
18	1	1
19	1	1
20	1	1
21	1	1
22	1	1
23	1	1
24	1	1
25	1	1
26	1	1
27	1	1
28	1	1
29	1	1
30	1	1
31	1	1
32	1	1
33	1	1
34	1	1
35	1	1
36	1	1
37	1	1
38	1	1
39	1	1
40	1	1
41	1	1
42	1	1
43	1	1
44	1	1
45	1	1
46	1	1
47	1	1
48	1	1
49	1	1
50	1	1
51	1	1
52	1	1
53	1	1
54	1	1
55	1	1
56	1	1
57	1	1
58	1	1
59	1	1
60	1	1
61	1	1
62	1	1
63	1	1
64	1	1
65	1	1
66	1	1
67	1	1
68	1	1
69	1	1
70	1	1
71	1	1
72	1	1
73	1	1
74	1	1
75	1	1
76	1	1
77	1	1
78	1	1
79	1	1
80	1	1
81	1	1
82	1	1
83	1	1
84	1	1
85	1	1
86	1	1
87	1	1
88	1	1
89	1	1
90	1	1
91	1	1
92	1	1
93	1	1
94	1	1
95	1	1
96	1	1
97	1	1
98	1	1
99	1	1
100	1	1

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 31.2 "

Longitude: 76° 27' 23.53"

Depth to Water Level: 66.98 ft

Measured from: Land Surface X TOC

Casing Stickup: 2.38 ft

Elevation of Water Level: 545.68 ft./MSL

Sampling Depth: 130 ft

Volume of Water Column:	107.24	gal
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Total Well Depth: 140 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X Yes No

Well Volumes Purged: 0.9

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 11/5/2021

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): 3211130002 Final Lab Analysis CompletionDate: 12/3/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP031W

Sample Date 11/5/2021

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	D6919-09
BICARBONATE ALKALINITY	65	SM20-2320B
CALCIUM, TOTAL	42.7	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	24.5	EPA 300
FLUORIDE	0.2	EPA 300
IRON, TOTAL (ug/l)	3700	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	4.1	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	340	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	7.73	FIELD
pH-LAB (SU)	8.1	SM20-4500HB
POTASSIUM, TOTAL	1.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	9.8	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	441	FIELD
SPEC. COND., LAB (umhos/cm)	395	SW846 9050A
SULFATE	46.7	EPA 300
ALKALINITY	65	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	202	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	15.7	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 101389

Monitoring Point No. FFMP031W

Sample Date 11/5/2021

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	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
02/24/2022

DEP USE ONLY

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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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP002W

☒ Well ☐ Spring ☐ Stream ☐ Other

☒ Upgradient/Upstream ☐ Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 32.25 "

Longitude: 76 ° 27 ' 24.03 "

Depth to Water Level: 65.8 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.60 ft

Elevation of Water Level: 547.40 ft./MSL

Sampling Depth: 85 ft

Volume of Water Column: 152.45 gal

Total Well Depth: 169.6 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 0.6

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 11/5/2021

Sample Collection Time: 11:34

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): 3211130003 Final Lab Analysis CompletionDate: 12/3/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP002W

Sample Date 11/5/2021

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	0.132	D6919-09
BICARBONATE ALKALINITY	5 ND	SM20-2320B
CALCIUM, TOTAL	18	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	21	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	7.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	230	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	20.5 E	EPA 300
pH-FIELD (SU)	4.59	FIELD
pH-LAB (SU)	5.7	SM20-4500HB
POTASSIUM, TOTAL	1.5	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	13.5	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	377	FIELD
SPEC. COND., LAB (umhos/cm)	352	SW846 9050A
SULFATE	16	EPA 300
ALKALINITY	5 ND	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	198	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.33	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 101389

Monitoring Point No. FFMP002W

Sample Date 11/5/2021

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	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
02/24/2022

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: Frey Farm Landfill

Facility ID (as issued by DEP): 101389

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: FFMP032W

☒ Well ☐ Spring ☐ Stream ☐ Other

☒ Upgradient/Upstream ☐ Downgradient/Downstream

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 33.45 "

Longitude: 76 ° 27 ' 17.71 "

Depth to Water Level: 50.19 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.06 ft

Elevation of Water Level: 543.90 ft./MSL

Sampling Depth: 62 ft

Volume of Water Column: 36.44 gal

Total Well Depth: 75 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 0.3

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 11/5/2021

Sample Collection Time: 14:36

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): 3211130004 Final Lab Analysis CompletionDate: 12/3/2021

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP032W

Sample Date 11/5/2021

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	0.615	D6919-09
BICARBONATE ALKALINITY	62	SM20-2320B
CALCIUM, TOTAL	14.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	21.8	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	7100	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	5.5	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	590	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.9	FIELD
pH-LAB (SU)	8	SM20-4500HB
POTASSIUM, TOTAL	1.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	12.8	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	286	FIELD
SPEC. COND., LAB (umhos/cm)	214	SW846 9050A
SULFATE	2 ND	EPA 300
ALKALINITY	62	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	114	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	110	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 101389

Monitoring Point No. FFMP032W

Sample Date 11/5/2021

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	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.

January 9, 2022

Mr. Daniel Brown
Lancaster County Solid Waste Authority
1299 Hbg Pike, P.O. Box 4425
Lancaster, PA 17604

Certificate of Analysis

Project Name:	FREY FARM	Workorder:	3210504
Purchase Order:	PO-1000371	Workorder ID:	4TH QTR 2021 GWMP-FORM 19Q

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, November 2, 2021.

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 Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

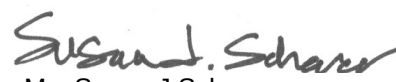
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications 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 Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Ashley Gichuki , Ms. Jordan Gallagher , Mr. Jeff Musser

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


Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3210504001	FFMP015W	Ground Water	11/2/2021 11:08	11/2/2021 17:00	Mr. Brian G Shade
3210504002	FFMP03AW	Ground Water	11/2/2021 12:26	11/2/2021 17:00	Mr. Brian G Shade
3210504003	FFMP005W	Ground Water	11/2/2021 13:53	11/2/2021 17:00	Mr. Brian G Shade
3210504004	FFMP26RW	Ground Water	11/2/2021 15:11	11/2/2021 17:00	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

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

Standard Acronyms/Flags

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

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ALS Environmental



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

PROJECT SUMMARY

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

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ANALYTICAL RESULTS

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210504001**
Sample ID: **FFMP015W**

Date Collected: 11/2/2021 11:08 Matrix: Ground Water
Date Received: 11/2/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/8/21 12:02	DPC	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:02	DPC	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	119	C	%	62 - 133	SW846 8260B			11/8/21 12:02	DPC	G
4-Bromofluorobenzene (S)	101	C	%	79 - 114	SW846 8260B			11/8/21 12:02	DPC	G
Dibromofluoromethane (S)	105	C	%	78 - 116	SW846 8260B			11/8/21 12:02	DPC	G
Toluene-d8 (S)	102	C	%	76 - 127	SW846 8260B			11/8/21 12:02	DPC	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	17	C	mg/L	5	SM2320B-2011			11/13/21 05:31	JXM	B
Alkalinity, Total	17	C,5	mg/L	5	SM2320B-2011			11/13/21 05:31	JXM	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			11/18/21 00:20	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 08:50	ALK	A
Chloride	42.1	C	mg/L	2.0	EPA 300.0			11/4/21 14:34	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			11/4/21 14:34	GJB	B
pH	76.96	C,2	pH_Units		S4500HB-11			11/13/21 05:31	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	725	C	umhos/cm	1	SW846 9050A			11/10/21 15:25	MBS	B
Sulfate	30.5	C	mg/L	2.0	EPA 300.0			11/4/21 14:34	GJB	B
Total Dissolved Solids	366	C	mg/L	25	S2540C-11			11/9/21 11:56	AKH	B
Total Organic Carbon (TOC)	0.72	C	mg/L	0.50	SW846 9060A			11/9/21 22:51	PAG	D
Turbidity	0.27	C,3	NTU	0.10	SM2130B-2011			11/22/21 14:12	BXD	B
METALS										

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ANALYTICAL RESULTS

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210504001**

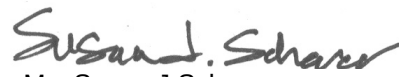
Date Collected: 11/2/2021 11:08

Matrix: Ground Water

Sample ID: **FFMP015W**

Date Received: 11/2/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Calcium, Total	23.4	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:31	SRT	J
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:31	SRT	J
Magnesium, Total	33.7	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:31	SRT	J
Manganese, Total	0.072	C	mg/L	0.0056	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:31	SRT	J
Potassium, Total	2.4	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:31	SRT	J
Sodium, Total	25.6	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:31	SRT	J
FIELD PARAMETERS										
Depth to Water Level	63.16	C	Feet		Field			11/2/21 11:08	BGS	C
Dissolved Oxygen	8.17	C	mg/L	0.01	Field			11/2/21 11:08	BGS	C
Elev Top MW Casing above MSL	576.40	C	Feet		Field			11/2/21 11:08	BGS	C
Flow Rate	2.04	C	gal/min		Field			11/2/21 11:08	BGS	C
Ground Water Elevation	513.24	C	ft/MSL		Field			11/2/21 11:08	BGS	C
Oxidation-Reduction Potential	320	C	mV		Field			11/2/21 11:08	BGS	C
pH, Field (SM4500B)	5.28	C	pH_Units		Field			11/2/21 11:08	BGS	C
Sample Depth	135.00	C	Feet		Field			11/2/21 11:08	BGS	C
Specific Conductance, Field	986	C	umhos/cm	1	Field			11/2/21 11:08	BGS	C
Temperature	14.07	C	Deg. C		Field			11/2/21 11:08	BGS	C
Total Well Depth	149.90	C	Feet		Field			11/2/21 11:08	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/2/21 11:08	BGS	C
Volume in Water Column	127.51	C	Gallons		Field			11/2/21 11:08	BGS	C
Water Level After Purge	120.29	C	Feet		Field			11/2/21 11:08	BGS	C
Well Volumes Purged	1.12	C	Vol		Field			11/2/21 11:08	BGS	C


Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210504002**
Sample ID: **FFMP03AW**

Date Collected: 11/2/2021 12:26 Matrix: Ground Water
Date Received: 11/2/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/8/21 12:25	DPC	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:25	DPC	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	117	C	%	62 - 133	SW846 8260B			11/8/21 12:25	DPC	G
4-Bromofluorobenzene (S)	98.8	C	%	79 - 114	SW846 8260B			11/8/21 12:25	DPC	G
Dibromofluoromethane (S)	103	C	%	78 - 116	SW846 8260B			11/8/21 12:25	DPC	G
Toluene-d8 (S)	102	C	%	76 - 127	SW846 8260B			11/8/21 12:25	DPC	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	15	C	mg/L	5	SM2320B-2011			11/13/21 05:31	JXM	B
Alkalinity, Total	15	C,4	mg/L	5	SM2320B-2011			11/13/21 05:31	JXM	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			11/20/21 07:21	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 08:50	ALK	A
Chloride	34.7	C	mg/L	2.0	EPA 300.0			11/4/21 15:02	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			11/4/21 15:02	GJB	B
Nitrate-N	22.3	C	mg/L	1.0	EPA 300.0			12/2/21 18:41	GJB	B
pH	6.99	C,1	pH_Units		S4500HB-11			11/13/21 05:31	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	422	C	umhos/cm	1	SW846 9050A			11/10/21 15:25	MBS	B
Sulfate	2.9	C	mg/L	2.0	EPA 300.0			11/4/21 15:02	GJB	B
Total Dissolved Solids	236	C	mg/L	25	S2540C-11			11/9/21 11:56	AKH	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			11/9/21 22:51	PAG	D
Turbidity	0.59	C,2	NTU	0.10	SM2130B-2011			11/22/21 14:12	BXD	B

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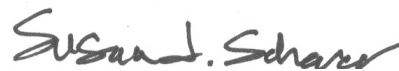
ANALYTICAL RESULTS

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210504002**
Sample ID: **FFMP03AW**

Date Collected: 11/2/2021 12:26 Matrix: Ground Water
Date Received: 11/2/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	22.0	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:42	SRT	J
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:42	SRT	J
Magnesium, Total	13.7	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:42	SRT	J
Manganese, Total	0.31	C	mg/L	0.0056	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:42	SRT	J
Potassium, Total	1.4	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:42	SRT	J
Sodium, Total	13.3	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:42	SRT	J
FIELD PARAMETERS										
Depth to Water Level	52.59	C	Feet		Field			11/2/21 12:26	BGS	C
Dissolved Oxygen	1.23	C	mg/L	0.01	Field			11/2/21 12:26	BGS	C
Elev Top MW Casing above MSL	590.90	C	Feet		Field			11/2/21 12:26	BGS	C
Flow Rate	1.70	C	gal/min		Field			11/2/21 12:26	BGS	C
Ground Water Elevation	538.31	C	ft/MSL		Field			11/2/21 12:26	BGS	C
Oxidation-Reduction Potential	336	C	mV		Field			11/2/21 12:26	BGS	C
pH, Field (SM4500B)	4.96	C	pH_Units		Field			11/2/21 12:26	BGS	C
Sample Depth	130.00	C	Feet		Field			11/2/21 12:26	BGS	C
Specific Conductance, Field	566	C	umhos/cm	1	Field			11/2/21 12:26	BGS	C
Temperature	13.52	C	Deg. C		Field			11/2/21 12:26	BGS	C
Total Well Depth	148.40	C	Feet		Field			11/2/21 12:26	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/2/21 12:26	BGS	C
Volume in Water Column	140.84	C	Gallons		Field			11/2/21 12:26	BGS	C
Water Level After Purge	83.74	C	Feet		Field			11/2/21 12:26	BGS	C
Well Volumes Purged	0.73	C	Vol		Field			11/2/21 12:26	BGS	C


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ANALYTICAL RESULTS

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210504003**
Sample ID: **FFMP005W**

Date Collected: 11/2/2021 13:53 Matrix: Ground Water
Date Received: 11/2/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/8/21 12:48	DPC	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/8/21 12:48	DPC	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	121	C	%	62 - 133	SW846 8260B			11/8/21 12:48	DPC	G
4-Bromofluorobenzene (S)	98.6	C	%	79 - 114	SW846 8260B			11/8/21 12:48	DPC	G
Dibromofluoromethane (S)	105	C	%	78 - 116	SW846 8260B			11/8/21 12:48	DPC	G
Toluene-d8 (S)	97.5	C	%	76 - 127	SW846 8260B			11/8/21 12:48	DPC	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	48	C	mg/L	5	SM2320B-2011			11/13/21 05:31	JXM	B
Alkalinity, Total	48	C,4	mg/L	5	SM2320B-2011			11/13/21 05:31	JXM	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			11/18/21 13:38	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 08:50	ALK	A
Chloride	193	C	mg/L	2.0	EPA 300.0			11/4/21 15:29	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			11/4/21 15:29	GJB	B
Nitrate-N	2.3	C	mg/L	0.20	EPA 300.0			11/4/21 15:29	GJB	B
pH	7.58	C,1	pH_Units		S4500HB-11			11/13/21 05:31	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	1070	C	umhos/cm	1	SW846 9050A			11/10/21 15:25	MBS	B
Sulfate	67.5	C	mg/L	2.0	EPA 300.0			11/4/21 15:29	GJB	B
Total Dissolved Solids	584	C	mg/L	25	S2540C-11			11/9/21 11:56	AKH	B
Total Organic Carbon (TOC)	0.70	C	mg/L	0.50	SW846 9060A			11/9/21 22:51	PAG	D
Turbidity	0.84	C,2	NTU	0.10	SM2130B-2011			11/22/21 14:12	BXD	B

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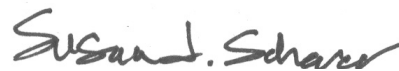
ANALYTICAL RESULTS

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210504003**
Sample ID: **FFMP005W**

Date Collected: 11/2/2021 13:53 Matrix: Ground Water
Date Received: 11/2/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	70.8	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/9/21 14:28	SRT	J
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	11/8/21 18:02	JSE	11/9/21 14:28	SRT	J
Magnesium, Total	18.9	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/9/21 14:28	SRT	J
Manganese, Total	0.16	C	mg/L	0.0056	SW846 6010C	11/8/21 18:02	JSE	11/9/21 14:28	SRT	J
Potassium, Total	3.1	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/9/21 14:28	SRT	J
Sodium, Total	47.1	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/9/21 14:28	SRT	J
FIELD PARAMETERS										
Depth to Water Level	63.72	C	Feet		Field			11/2/21 13:53	BGS	C
Dissolved Oxygen	ND	C	mg/L	0.01	Field			11/2/21 13:53	BGS	C
Elev Top MW Casing above MSL	537.40	C	Feet		Field			11/2/21 13:53	BGS	C
Flow Rate	1.75	C	gal/min		Field			11/2/21 13:53	BGS	C
Ground Water Elevation	473.68	C	ft/MSL		Field			11/2/21 13:53	BGS	C
Oxidation-Reduction Potential	565	C	mV		Field			11/2/21 13:53	BGS	C
pH, Field (SM4500B)	5.31	C	pH_Units		Field			11/2/21 13:53	BGS	C
Sample Depth	135.00	C	Feet		Field			11/2/21 13:53	BGS	C
Specific Conductance, Field	1495	C	umhos/cm	1	Field			11/2/21 13:53	BGS	C
Temperature	13.36	C	Deg. C		Field			11/2/21 13:53	BGS	C
Total Well Depth	149.70	C	Feet		Field			11/2/21 13:53	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/2/21 13:53	BGS	C
Volume in Water Column	126.39	C	Gallons		Field			11/2/21 13:53	BGS	C
Water Level After Purge	85.51	C	Feet		Field			11/2/21 13:53	BGS	C
Well Volumes Purged	0.97	C	Vol		Field			11/2/21 13:53	BGS	C


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ANALYTICAL RESULTS

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210504004**
Sample ID: **FFMP26RW**

Date Collected: 11/2/2021 15:11 Matrix: Ground Water
Date Received: 11/2/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/8/21 13:10	DPC	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/8/21 13:10	DPC	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	120	C	%	62 - 133	SW846 8260B			11/8/21 13:10	DPC	G
4-Bromofluorobenzene (S)	104	C	%	79 - 114	SW846 8260B			11/8/21 13:10	DPC	G
Dibromofluoromethane (S)	105	C	%	78 - 116	SW846 8260B			11/8/21 13:10	DPC	G
Toluene-d8 (S)	100	C	%	76 - 127	SW846 8260B			11/8/21 13:10	DPC	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	55	C	mg/L	5	SM2320B-2011			11/13/21 05:31	JXM	B
Alkalinity, Total	55	C,4	mg/L	5	SM2320B-2011			11/13/21 05:31	JXM	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			11/18/21 01:04	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 08:50	ALK	A
Chloride	169	C	mg/L	2.0	EPA 300.0			11/4/21 14:48	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			11/4/21 14:48	GJB	B
Nitrate-N	0.96	C	mg/L	0.20	EPA 300.0			11/4/21 14:48	GJB	B
pH	7.57	C,1	pH_Units		S4500HB-11			11/13/21 05:31	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	1080	C	umhos/cm	1	SW846 9050A			11/10/21 15:25	MBS	B
Sulfate	98.1	C	mg/L	2.0	EPA 300.0			11/4/21 14:48	GJB	B
Total Dissolved Solids	548	C	mg/L	25	S2540C-11			11/9/21 11:56	AKH	B
Total Organic Carbon (TOC)	1.1	C	mg/L	0.50	SW846 9060A			11/9/21 22:51	PAG	D
Turbidity	0.43	C,2	NTU	0.10	SM2130B-2011			11/22/21 14:12	BXD	B

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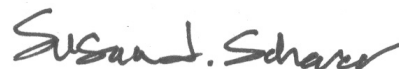
ANALYTICAL RESULTS

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210504004**
Sample ID: **FFMP26RW**

Date Collected: 11/2/2021 15:11 Matrix: Ground Water
Date Received: 11/2/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	81.7	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:49	SRT	J
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:49	SRT	J
Magnesium, Total	17.2	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:49	SRT	J
Manganese, Total	0.79	C	mg/L	0.0056	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:49	SRT	J
Potassium, Total	7.4	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:49	SRT	J
Sodium, Total	57.0	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/10/21 06:49	SRT	J
FIELD PARAMETERS										
Depth to Water Level	75.22	C	Feet		Field			11/2/21 15:11	BGS	C
Dissolved Oxygen	ND	C	mg/L	0.01	Field			11/2/21 15:11	BGS	C
Elev Top MW Casing above MSL	547.40	C	Feet		Field			11/2/21 15:11	BGS	C
Flow Rate	1.33	C	gal/min		Field			11/2/21 15:11	BGS	C
Ground Water Elevation	472.18	C	ft/MSL		Field			11/2/21 15:11	BGS	C
Oxidation-Reduction Potential	518	C	mV		Field			11/2/21 15:11	BGS	C
pH, Field (SM4500B)	5.49	C	pH_Units		Field			11/2/21 15:11	BGS	C
Sample Depth	105.00	C	Feet		Field			11/2/21 15:11	BGS	C
Specific Conductance, Field	1466	C	umhos/cm	1	Field			11/2/21 15:11	BGS	C
Temperature	14.23	C	Deg. C		Field			11/2/21 15:11	BGS	C
Total Well Depth	118.30	C	Feet		Field			11/2/21 15:11	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/2/21 15:11	BGS	C
Volume in Water Column	63.33	C	Gallons		Field			11/2/21 15:11	BGS	C
Water Level After Purge	83.44	C	Feet		Field			11/2/21 15:11	BGS	C
Well Volumes Purged	1.26	C	Vol		Field			11/2/21 15:11	BGS	C


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ANALYTICAL RESULTS

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3210504001	2	FFMP015W	S4500HB-11	pH
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.				
3210504001	3	FFMP015W	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3210504001	5	FFMP015W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3210504002	1	FFMP03AW	S4500HB-11	pH
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.				
3210504002	2	FFMP03AW	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3210504002	4	FFMP03AW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3210504003	1	FFMP005W	S4500HB-11	pH
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.				
3210504003	2	FFMP005W	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3210504003	4	FFMP005W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3210504004	1	FFMP26RW	S4500HB-11	pH
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.				
3210504004	2	FFMP26RW	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3210504004	4	FFMP26RW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3210504001	FFMP015W	ASTM D6919-09		
3210504001	FFMP015W	EPA 300.0		
3210504001	FFMP015W	EPA 410.4		
3210504001	FFMP015W	Field		
3210504001	FFMP015W	S2540C-11		
3210504001	FFMP015W	S4500HB-11		
3210504001	FFMP015W	SM2130B-2011		
3210504001	FFMP015W	SM2320B-2011		
3210504001	FFMP015W	SW846 6010C	SW846 3015	
3210504001	FFMP015W	SW846 8260B		
3210504001	FFMP015W	SW846 9050A		
3210504001	FFMP015W	SW846 9060A		
3210504001	FFMP015W	SW846 9066	420.4/9066	
3210504002	FFMP03AW	ASTM D6919-09		
3210504002	FFMP03AW	EPA 300.0		
3210504002	FFMP03AW	EPA 410.4		
3210504002	FFMP03AW	Field		
3210504002	FFMP03AW	S2540C-11		
3210504002	FFMP03AW	S4500HB-11		
3210504002	FFMP03AW	SM2130B-2011		
3210504002	FFMP03AW	SM2320B-2011		
3210504002	FFMP03AW	SW846 6010C	SW846 3015	
3210504002	FFMP03AW	SW846 8260B		
3210504002	FFMP03AW	SW846 9050A		
3210504002	FFMP03AW	SW846 9060A		
3210504002	FFMP03AW	SW846 9066	420.4/9066	
3210504003	FFMP005W	ASTM D6919-09		
3210504003	FFMP005W	EPA 300.0		
3210504003	FFMP005W	EPA 410.4		
3210504003	FFMP005W	Field		
3210504003	FFMP005W	S2540C-11		
3210504003	FFMP005W	S4500HB-11		
3210504003	FFMP005W	SM2130B-2011		
3210504003	FFMP005W	SM2320B-2011		
3210504003	FFMP005W	SW846 6010C	SW846 3015	
3210504003	FFMP005W	SW846 8260B		
3210504003	FFMP005W	SW846 9050A		
3210504003	FFMP005W	SW846 9060A		
3210504003	FFMP005W	SW846 9066	420.4/9066	
3210504004	FFMP26RW	ASTM D6919-09		
3210504004	FFMP26RW	EPA 300.0		
3210504004	FFMP26RW	EPA 410.4		
3210504004	FFMP26RW	Field		
3210504004	FFMP26RW	S2540C-11		
3210504004	FFMP26RW	S4500HB-11		
3210504004	FFMP26RW	SM2130B-2011		

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**ANALYSIS - PREP METHOD CROSS REFERENCE TABLE**

Workorder: 3210504 4TH QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3210504004	FFMP26RW	SM2320B-2011		
3210504004	FFMP26RW	SW846 6010C	SW846 3015	
3210504004	FFMP26RW	SW846 8260B		
3210504004	FFMP26RW	SW846 9050A		
3210504004	FFMP26RW	SW846 9060A		
3210504004	FFMP26RW	SW846 9066	420.4/9066	

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Generated by ALS

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

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#: Frey Farm Quarterly (GWMP)

Bill To: Lancaster County Solid Waste MA

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

Date Required: _____ Approved By: _____

Email? ☒ Y ☐ N dbrown@LCSWMA.com

Fax? ☒ Y ☐ N No.: (717) 397-9973

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time
--	-------------	------

1. FFMP015W 11/02/21 1108

2. FFMP03AW 11/02/21 1226

3. FFMP005W 11/02/21 1353

4. FFMP26RW 11/02/21 1511

5

6

7

8

9

10

Project Comments:

LOGGED BY (signature):

REVIEWED BY (signature):

Date Time Received By / Company Name

11/02/21 1622 ACS

3

5

7

9

10

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

* G=Grab, C=Composite

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

COC #:

ALS Quote

3210504

Receiv

Therm ID: 575

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?

HeadSpace/Volatiles?

Courier/Tracking #:

Sample/COC Comments

110420211668

110420211668

11042021167

11042021169

ALS Field Services: ☐ Pickup ☐ Labor

☐ Composite Sampling ☐ Rental Equipment

☐ Other:

Standard

CLP-like

USACE

Special Processing

USACE

Navy

State Samples Collected In

NY

NJ

PA

NC

Sample Disposal

Lab

Special

Reportable to PADEP?

Yes

PWSID #

EDDS: Format Type

9

10

11

12

13

14



301 Fulling Mill Road
Middletown, PA 17057
P: (717) 944-5541
F: (717) 944-1430

3210504

ion of Sample Receipt Form

Client: _____ Work: Lancaster County Solid Waste Authority Initials: ASC Date: 11/5/21

1. Were airbills / tracking numbers present and recorded?..... NONE YES NO
Tracking number: _____
2. Are Custody Seals on shipping containers intact?..... NONE YES NO
3. Are Custody Seals on sample containers intact?..... NONE YES NO
4. Is there a COC (Chain-of-Custody) present?..... YES NO
5. Are the COC and bottle labels complete, legible and in agreement?..... YES NO
- 5a. Does the COC contain sample locations?..... YES NO
- 5b. Does the COC contain date and time of sample collection for all samples?..... YES NO
- 5c. Does the COC contain sample collectors name?..... YES NO
- 5d. Does the COC note the type(s) of preservation for all bottles?..... 11/5/21 ASC YES NO
- 5e. Does the COC note the number of bottles submitted for each sample?..... YES NO
- 5f. Does the COC note the type of sample, composite or grab?..... YES NO
- 5g. Does the COC note the matrix of the sample(s)?..... YES NO
6. Are all aqueous samples requiring preservation preserved correctly?¹..... N/A YES NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... YES NO
8. Are all samples within holding times for the requested analyses?..... YES NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... YES NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631 E (LL Hg)?..... N/A YES NO
11. Were the samples received on ice?..... YES NO
12. Were sample temperatures measured at 0.0-6.0°C..... YES NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below..... YES NO
- 13a. Are the samples required for SDWA compliance reporting?..... N/A YES NO
- 13b. Did the client provide a SDWA PWS ID#?..... N/A YES NO
- 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... N/A YES NO
- 13d. Did the client provide the SDWA sample location ID/Description?..... N/A YES NO
- 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... N/A YES NO

Cooler #: _____

Temperature (°C): 4 _____

Thermometer ID: 575 _____

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

¹Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

December 30, 2021

Mr. Daniel Brown
Lancaster County Solid Waste Authority
1299 Hbg Pike, P.O. Box 4425
Lancaster, PA 17604

Certificate of Analysis

Project Name:	FREY FARM	Workorder:	3210476
Purchase Order:	PO-1000371	Workorder ID:	4TH QTR 2021 GWMP-FORM 19Q

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Thursday, November 4, 2021.

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 Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

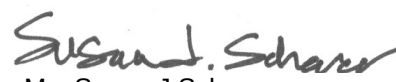
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications 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 Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Ashley Gichuki , Ms. Jordan Gallagher , Mr. Jeff Musser

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


Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3210476001	FFMP019W	Ground Water	11/4/2021 10:23	11/4/2021 16:54	Mr. Brian G Shade
3210476002	FFMP018W	Ground Water	11/4/2021 11:15	11/4/2021 16:54	Mr. Brian G Shade
3210476003	FFMP033W	Ground Water	11/4/2021 12:33	11/4/2021 16:54	Mr. Brian G Shade
3210476004	FFMP034W	Ground Water	11/4/2021 13:57	11/4/2021 16:54	Mr. Brian G Shade
3210476005	FFMP02SW	Ground Water	11/4/2021 14:28	11/4/2021 16:54	Mr. Brian G Shade
3210476006	FFMP02DW	Ground Water	11/4/2021 15:37	11/4/2021 16:54	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

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

Standard Acronyms/Flags

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

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ALS Environmental



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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

PROJECT SUMMARY

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

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ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476001**
Sample ID: **FFMP019W**

Date Collected: 11/4/2021 10:23 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/5/21 23:21	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:21	PDK	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94	C	%	62 - 133	SW846 8260B			11/5/21 23:21	PDK	G
4-Bromofluorobenzene (S)	89.6	C	%	79 - 114	SW846 8260B			11/5/21 23:21	PDK	G
Dibromofluoromethane (S)	87.9	C	%	78 - 116	SW846 8260B			11/5/21 23:21	PDK	G
Toluene-d8 (S)	83.1	C	%	76 - 127	SW846 8260B			11/5/21 23:21	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	61	C	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	B
Alkalinity, Total	61	C,4	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			11/20/21 01:34	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 08:40	ALK	A
Chloride	86.8	C	mg/L	2.0	EPA 300.0			12/1/21 17:54	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			12/1/21 17:54	GJB	B
Nitrate-N	ND	C	mg/L	0.20	EPA 300.0			12/1/21 17:54	GJB	B
pH	7.95	C,1	pH_Units		S4500HB-11			11/12/21 23:50	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:12	MXF	11/12/21 12:41	MXF	F
Specific Conductance	583	C	umhos/cm	1	SW846 9050A			11/10/21 15:25	MBS	B
Sulfate	21.3	C	mg/L	2.0	EPA 300.0			12/1/21 17:54	GJB	B
Total Dissolved Solids	346	C	mg/L	25	S2540C-11			11/10/21 12:23	AKH	B
Total Organic Carbon (TOC)	0.80	C	mg/L	0.50	SW846 9060A			11/10/21 22:58	PAG	D
Turbidity	1.55	C,2	NTU	0.10	SM2130B-2011			11/16/21 12:07	BXD	B

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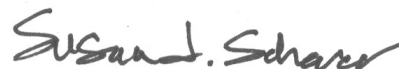
ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476001**
Sample ID: **FFMP019W**

Date Collected: 11/4/2021 10:23 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	62.0	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/11/21 14:56	SRT	J
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	11/8/21 18:02	JSE	11/11/21 14:56	SRT	J
Magnesium, Total	6.3	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/11/21 14:56	SRT	J
Manganese, Total	ND	C	mg/L	0.0056	SW846 6010C	11/8/21 18:02	JSE	11/11/21 14:56	SRT	J
Potassium, Total	1.4	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/11/21 14:56	SRT	J
Sodium, Total	13.3	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/11/21 14:56	SRT	J
FIELD PARAMETERS										
Depth to Water Level	26.81	C	Feet		Field			11/4/21 10:23	BGS	C
Dissolved Oxygen	0.03	C	mg/L	0.01	Field			11/4/21 10:23	BGS	C
Elev Top MW Casing above MSL	471.95	C	Feet		Field			11/4/21 10:23	BGS	C
Flow Rate	3.62	C	gal/min		Field			11/4/21 10:23	BGS	C
Ground Water Elevation	445.14	C	ft/MSL		Field			11/4/21 10:23	BGS	C
Oxidation-Reduction Potential	137	C	mV		Field			11/4/21 10:23	BGS	C
pH, Field (SM4500B)	6.39	C	pH_Units		Field			11/4/21 10:23	BGS	C
Sample Depth	49.00	C	Feet		Field			11/4/21 10:23	BGS	C
Specific Conductance, Field	659	C	umhos/cm	1	Field			11/4/21 10:23	BGS	C
Temperature	14.00	C	Deg. C		Field			11/4/21 10:23	BGS	C
Total Well Depth	132.79	C	Feet		Field			11/4/21 10:23	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/4/21 10:23	BGS	C
Volume in Water Column	68.89	C	Gallons		Field			11/4/21 10:23	BGS	C
Water Level After Purge	36.16	C	Feet		Field			11/4/21 10:23	BGS	C
Well Volumes Purged	2.10	C	Vol		Field			11/4/21 10:23	BGS	C


Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476002**
Sample ID: **FFMP018W**

Date Collected: 11/4/2021 11:15 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/5/21 23:44	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/5/21 23:44	PDK	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	93.9	C	%	62 - 133	SW846 8260B			11/5/21 23:44	PDK	G
4-Bromofluorobenzene (S)	88.8	C	%	79 - 114	SW846 8260B			11/5/21 23:44	PDK	G
Dibromofluoromethane (S)	86.9	C	%	78 - 116	SW846 8260B			11/5/21 23:44	PDK	G
Toluene-d8 (S)	82.5	C	%	76 - 127	SW846 8260B			11/5/21 23:44	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	19	C	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	B
Alkalinity, Total	19	C,4	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			11/20/21 06:55	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 08:40	ALK	A
Chloride	114	C	mg/L	2.0	EPA 300.0			12/1/21 18:08	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			12/1/21 18:08	GJB	B
Nitrate-N	5.2	C	mg/L	0.20	EPA 300.0			12/1/21 18:08	GJB	B
pH	7.03	C,1	pH_Units		S4500HB-11			11/12/21 23:50	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:12	MXF	11/12/21 12:41	MXF	F
Specific Conductance	725	C	umhos/cm	1	SW846 9050A			11/16/21 19:18	MBS	B
Sulfate	38.5	C	mg/L	2.0	EPA 300.0			12/1/21 18:08	GJB	B
Total Dissolved Solids	392	C	mg/L	25	S2540C-11			11/10/21 12:44	AKH	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			11/10/21 22:58	PAG	D
Turbidity	0.88	C,2	NTU	0.10	SM2130B-2011			11/16/21 12:07	BXD	B

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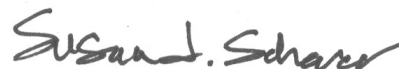
ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476002**
Sample ID: **FFMP018W**

Date Collected: 11/4/2021 11:15 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	32.8	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:06	SRT	J
Iron, Total	0.12	C	mg/L	0.067	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:06	SRT	J
Magnesium, Total	18.3	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:06	SRT	J
Manganese, Total	0.23	C	mg/L	0.0056	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:06	SRT	J
Potassium, Total	4.8	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:06	SRT	J
Sodium, Total	39.1	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:06	SRT	J
FIELD PARAMETERS										
Depth to Water Level	25.99	C	Feet		Field			11/4/21 11:14	BGS	C
Dissolved Oxygen	4.10	C	mg/L	0.01	Field			11/4/21 11:14	BGS	C
Elev Top MW Casing above MSL	472.20	C	Feet		Field			11/4/21 11:14	BGS	C
Flow Rate	1.96	C	gal/min		Field			11/4/21 11:14	BGS	C
Ground Water Elevation	446.21	C	ft/MSL		Field			11/4/21 11:14	BGS	C
Oxidation-Reduction Potential	267	C	mV		Field			11/4/21 11:14	BGS	C
pH, Field (SM4500B)	5.03	C	pH_Units		Field			11/4/21 11:14	BGS	C
Sample Depth	40.00	C	Feet		Field			11/4/21 11:14	BGS	C
Specific Conductance, Field	780	C	umhos/cm	1	Field			11/4/21 11:14	BGS	C
Temperature	14.83	C	Deg. C		Field			11/4/21 11:14	BGS	C
Total Well Depth	51.46	C	Feet		Field			11/4/21 11:14	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/4/21 11:14	BGS	C
Volume in Water Column	16.56	C	Gallons		Field			11/4/21 11:14	BGS	C
Water Level After Purge	27.26	C	Feet		Field			11/4/21 11:14	BGS	C
Well Volumes Purged	2.36	C	Vol		Field			11/4/21 11:14	BGS	C


Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476003**
Sample ID: **FFMP033W**

Date Collected: 11/4/2021 12:33 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/6/21 00:07	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:07	PDK	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	93.9	C	%	62 - 133	SW846 8260B			11/6/21 00:07	PDK	G
4-Bromofluorobenzene (S)	91.3	C	%	79 - 114	SW846 8260B			11/6/21 00:07	PDK	G
Dibromofluoromethane (S)	88	C	%	78 - 116	SW846 8260B			11/6/21 00:07	PDK	G
Toluene-d8 (S)	83.9	C	%	76 - 127	SW846 8260B			11/6/21 00:07	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	41	C	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	B
Alkalinity, Total	41	C,4	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	I
Ammonia-N	0.574	C	mg/L	0.100	ASTM D6919-09			11/20/21 06:30	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 08:40	ALK	A
Chloride	53.4	C	mg/L	2.0	EPA 300.0			12/1/21 14:38	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			12/1/21 14:38	GJB	B
Nitrate-N	10.7	C	mg/L	0.20	EPA 300.0			12/1/21 14:38	GJB	B
pH	7.31	C,1	pH_Units		S4500HB-11			11/12/21 23:50	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:12	MXF	11/12/21 12:41	MXF	F
Specific Conductance	437	C	umhos/cm	1	SW846 9050A			11/10/21 15:25	MBS	B
Sulfate	5.9	C	mg/L	2.0	EPA 300.0			12/1/21 14:38	GJB	B
Total Dissolved Solids	296	C	mg/L	25	S2540C-11			11/10/21 12:44	AKH	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			11/10/21 22:58	PAG	D
Turbidity	8.64	C,2	NTU	0.10	SM2130B-2011			11/16/21 12:07	BXD	B

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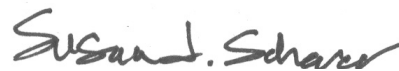
ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476003**
Sample ID: **FFMP033W**

Date Collected: 11/4/2021 12:33 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	30.5	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:10	SRT	J
Iron, Total	7.1	C	mg/L	0.067	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:10	SRT	J
Magnesium, Total	10.9	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:10	SRT	J
Manganese, Total	0.46	C	mg/L	0.0056	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:10	SRT	J
Potassium, Total	2.1	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:10	SRT	J
Sodium, Total	16.0	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:10	SRT	J
FIELD PARAMETERS										
Depth to Water Level	18.78	C	Feet		Field			11/4/21 12:33	BGS	C
Dissolved Oxygen	0.93	C	mg/L	0.01	Field			11/4/21 12:33	BGS	C
Elev Top MW Casing above MSL	516.52	C	Feet		Field			11/4/21 12:33	BGS	C
Flow Rate	1.70	C	gal/min		Field			11/4/21 12:33	BGS	C
Ground Water Elevation	497.74	C	ft/MSL		Field			11/4/21 12:33	BGS	C
Oxidation-Reduction Potential	48	C	mV		Field			11/4/21 12:33	BGS	C
pH, Field (SM4500B)	5.76	C	pH_Units		Field			11/4/21 12:33	BGS	C
Sample Depth	79.00	C	Feet		Field			11/4/21 12:33	BGS	C
Specific Conductance, Field	537	C	umhos/cm	1	Field			11/4/21 12:33	BGS	C
Temperature	15.04	C	Deg. C		Field			11/4/21 12:33	BGS	C
Total Well Depth	100.00	C	Feet		Field			11/4/21 12:33	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/4/21 12:33	BGS	C
Volume in Water Column	119.39	C	Gallons		Field			11/4/21 12:33	BGS	C
Water Level After Purge	31.98	C	Feet		Field			11/4/21 12:33	BGS	C
Well Volumes Purged	0.85	C	Vol		Field			11/4/21 12:33	BGS	C


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ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476004**
Sample ID: **FFMP034W**

Date Collected: 11/4/2021 13:57 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/6/21 00:29	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:29	PDK	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	93.5	C	%	62 - 133	SW846 8260B			11/6/21 00:29	PDK	G
4-Bromofluorobenzene (S)	89.5	C	%	79 - 114	SW846 8260B			11/6/21 00:29	PDK	G
Dibromofluoromethane (S)	86.1	C	%	78 - 116	SW846 8260B			11/6/21 00:29	PDK	G
Toluene-d8 (S)	83.8	C	%	76 - 127	SW846 8260B			11/6/21 00:29	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	36	C	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	B
Alkalinity, Total	36	C,4	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			11/20/21 01:47	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 08:40	ALK	A
Chloride	174	C	mg/L	2.0	EPA 300.0			12/1/21 15:06	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			12/1/21 15:06	GJB	B
Nitrate-N	9.0	C	mg/L	0.20	EPA 300.0			12/1/21 15:06	GJB	B
pH	7.36	C,1	pH_Units		S4500HB-11			11/12/21 23:50	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:12	MXF	11/12/21 12:41	MXF	F
Specific Conductance	959	C	umhos/cm	1	SW846 9050A			11/10/21 15:25	MBS	B
Sulfate	34.0	C	mg/L	2.0	EPA 300.0			12/1/21 15:06	GJB	B
Total Dissolved Solids	536	C	mg/L	25	S2540C-11			11/10/21 12:44	AKH	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			11/10/21 22:58	PAG	D
Turbidity	18.6	C,2	NTU	0.10	SM2130B-2011			11/16/21 12:07	BXD	B

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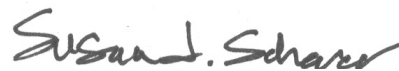
ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476004**
Sample ID: **FFMP034W**

Date Collected: 11/4/2021 13:57 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	62.6	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:14	SRT	J
Iron, Total	1.3	C	mg/L	0.067	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:14	SRT	J
Magnesium, Total	23.7	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:14	SRT	J
Manganese, Total	0.12	C	mg/L	0.0056	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:14	SRT	J
Potassium, Total	3.2	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:14	SRT	J
Sodium, Total	47.9	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:14	SRT	J
FIELD PARAMETERS										
Depth to Water Level	9.79	C	Feet		Field			11/4/21 13:56	BGS	C
Dissolved Oxygen	2.76	C	mg/L	0.01	Field			11/4/21 13:56	BGS	C
Elev Top MW Casing above MSL	472.88	C	Feet		Field			11/4/21 13:56	BGS	C
Flow Rate	1.34	C	gal/min		Field			11/4/21 13:56	BGS	C
Ground Water Elevation	463.09	C	ft/MSL		Field			11/4/21 13:56	BGS	C
Oxidation-Reduction Potential	156	C	mV		Field			11/4/21 13:56	BGS	C
pH, Field (SM4500B)	5.70	C	pH_Units		Field			11/4/21 13:56	BGS	C
Sample Depth	25.85	C	Feet		Field			11/4/21 13:56	BGS	C
Specific Conductance, Field	1139	C	umhos/cm	1	Field			11/4/21 13:56	BGS	C
Temperature	14.30	C	Deg. C		Field			11/4/21 13:56	BGS	C
Total Well Depth	121.00	C	Feet		Field			11/4/21 13:56	BGS	C
Turbidity, Field	11	C	NTU	1	Field			11/4/21 13:56	BGS	C
Volume in Water Column	163.48	C	Gallons		Field			11/4/21 13:56	BGS	C
Water Level After Purge	16.84	C	Feet		Field			11/4/21 13:56	BGS	C
Well Volumes Purged	0.49	C	Vol		Field			11/4/21 13:56	BGS	C


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ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476005**
Sample ID: **FFMP02SW**

Date Collected: 11/4/2021 14:28 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/6/21 00:52	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/6/21 00:52	PDK	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.4	C	%	62 - 133	SW846 8260B			11/6/21 00:52	PDK	G
4-Bromofluorobenzene (S)	90.2	C	%	79 - 114	SW846 8260B			11/6/21 00:52	PDK	G
Dibromofluoromethane (S)	89	C	%	78 - 116	SW846 8260B			11/6/21 00:52	PDK	G
Toluene-d8 (S)	83.1	C	%	76 - 127	SW846 8260B			11/6/21 00:52	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	21	C	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	B
Alkalinity, Total	21	C,6	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			11/16/21 13:27	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 08:50	ALK	A
Chloride	105	C	mg/L	2.0	EPA 300.0			12/1/21 15:34	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			12/1/21 15:34	GJB	B
Nitrate-N	10.7	C	mg/L	0.20	EPA 300.0			12/1/21 15:34	GJB	B
pH	7.20	C,1	pH_Units		S4500HB-11			11/12/21 23:50	JXM	B
Phenolics	ND	C,3,4	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	655	C	umhos/cm	1	SW846 9050A			11/10/21 15:25	MBS	B
Sulfate	31.0	C	mg/L	2.0	EPA 300.0			12/1/21 15:34	GJB	B
Total Dissolved Solids	334	C	mg/L	25	S2540C-11			11/10/21 12:44	AKH	B
Total Organic Carbon (TOC)	1.8	C	mg/L	0.50	SW846 9060A			11/11/21 02:54	PAG	D

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ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476005**
Sample ID: **FFMP02SW**

Date Collected: 11/4/2021 14:28 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Turbidity	25.6	C,2	NTU	0.10	SM2130B-2011			11/16/21 12:07	BXD	B
METALS										
Calcium, Total	23.2	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:17	SRT	J
Iron, Total	1.3	C	mg/L	0.067	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:17	SRT	J
Magnesium, Total	9.2	C	mg/L	0.11	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:17	SRT	J
Manganese, Total	0.063	C	mg/L	0.0056	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:17	SRT	J
Potassium, Total	5.5	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:17	SRT	J
Sodium, Total	79.6	C	mg/L	0.56	SW846 6010C	11/8/21 18:02	JSE	11/11/21 15:17	SRT	J
FIELD PARAMETERS										
Depth to Water Level	14.79	C	Feet		Field			11/4/21 14:28	BGS	C
Dissolved Oxygen	1.97	C	mg/L	0.01	Field			11/4/21 14:28	BGS	C
Elev Top MW Casing above MSL	509.90	C	Feet		Field			11/4/21 14:28	BGS	C
Flow Rate	1.00	C	gal/min		Field			11/4/21 14:28	BGS	C
Ground Water Elevation	495.11	C	ft/MSL		Field			11/4/21 14:28	BGS	C
Oxidation-Reduction Potential	204	C	mV		Field			11/4/21 14:28	BGS	C
pH, Field (SM4500B)	5.46	C	pH_Units		Field			11/4/21 14:28	BGS	C
Sample Depth	19.00	C	Feet		Field			11/4/21 14:28	BGS	C
Specific Conductance, Field	679	C	umhos/cm	1	Field			11/4/21 14:28	BGS	C
Temperature	16.49	C	Deg. C		Field			11/4/21 14:28	BGS	C
Total Well Depth	22.70	C	Feet		Field			11/4/21 14:28	BGS	C
Turbidity, Field	40	C	NTU	1	Field			11/4/21 14:28	BGS	C
Volume in Water Column	5.14	C	Gallons		Field			11/4/21 14:28	BGS	C
Water Level After Purge	18.62	C	Feet		Field			11/4/21 14:28	BGS	C
Well Volumes Purged	2.34	C	Vol		Field			11/4/21 14:28	BGS	C


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ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476006**
Sample ID: **FFMP02DW**

Date Collected: 11/4/2021 15:37 Matrix: Ground Water
Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/6/21 01:14	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/6/21 01:14	PDK	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	96.1	C	%	62 - 133	SW846 8260B			11/6/21 01:14	PDK	G
4-Bromofluorobenzene (S)	89.3	C	%	79 - 114	SW846 8260B			11/6/21 01:14	PDK	G
Dibromofluoromethane (S)	89	C	%	78 - 116	SW846 8260B			11/6/21 01:14	PDK	G
Toluene-d8 (S)	82.7	C	%	76 - 127	SW846 8260B			11/6/21 01:14	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	96	C	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	B
Alkalinity, Total	96	C,4	mg/L	5	SM2320B-2011			11/12/21 23:50	JXM	I
Ammonia-N	0.117	C	mg/L	0.100	ASTM D6919-09			11/18/21 14:55	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 08:40	ALK	A
Chloride	443	C,E	mg/L	2.0	EPA 300.0			12/1/21 18:22	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			12/1/21 18:22	GJB	B
Nitrate-N	6.3	C	mg/L	0.20	EPA 300.0			12/1/21 18:22	GJB	B
pH	8.10	C,1	pH_Units		S4500HB-11			11/12/21 23:50	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	2000	C	umhos/cm	2	SW846 9050A			11/10/21 15:25	MBS	B
Sulfate	36.2	C	mg/L	2.0	EPA 300.0			12/1/21 18:22	GJB	B
Total Dissolved Solids	1220	C	mg/L	25	S2540C-11			11/10/21 13:05	AKH	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			11/11/21 02:54	PAG	D
Turbidity	1.41	C,2	NTU	0.10	SM2130B-2011			11/16/21 12:07	BXD	B

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ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3210476006**

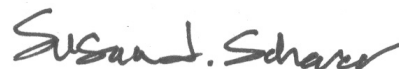
Date Collected: 11/4/2021 15:37

Matrix: Ground Water

Sample ID: **FFMP02DW**

Date Received: 11/4/2021 16:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	136	C	mg/L	0.11	SW846 6010C	11/13/21 13:05	AHI	11/15/21 10:38	SRT	J1
Iron, Total	0.12	C	mg/L	0.067	SW846 6010C	11/13/21 13:05	AHI	11/15/21 10:38	SRT	J1
Magnesium, Total	23.7	C	mg/L	0.11	SW846 6010C	11/13/21 13:05	AHI	11/15/21 10:38	SRT	J1
Manganese, Total	0.50	C	mg/L	0.0056	SW846 6010C	11/13/21 13:05	AHI	11/15/21 10:38	SRT	J1
Potassium, Total	2.5	C	mg/L	0.56	SW846 6010C	11/13/21 13:05	AHI	11/15/21 10:38	SRT	J1
Sodium, Total	150	C	mg/L	0.56	SW846 6010C	11/13/21 13:05	AHI	11/15/21 10:38	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	20.71	C	Feet		Field			11/4/21 15:37	BGS	C
Dissolved Oxygen	2.16	C	mg/L	0.01	Field			11/4/21 15:37	BGS	C
Elev Top MW Casing above MSL	509.60	C	Feet		Field			11/4/21 15:37	BGS	C
Flow Rate	1.35	C	gal/min		Field			11/4/21 15:37	BGS	C
Ground Water Elevation	488.89	C	ft/MSL		Field			11/4/21 15:37	BGS	C
Oxidation-Reduction Potential	61	C	mV		Field			11/4/21 15:37	BGS	C
pH, Field (SM4500B)	7.48	C	pH_Units		Field			11/4/21 15:37	BGS	C
Sample Depth	120.00	C	Feet		Field			11/4/21 15:37	BGS	C
Specific Conductance, Field	2462	C	umhos/cm	1	Field			11/4/21 15:37	BGS	C
Temperature	13.96	C	Deg. C		Field			11/4/21 15:37	BGS	C
Total Well Depth	153.00	C	Feet		Field			11/4/21 15:37	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/4/21 15:37	BGS	C
Volume in Water Column	194.47	C	Gallons		Field			11/4/21 15:37	BGS	C
Water Level After Purge	48.23	C	Feet		Field			11/4/21 15:37	BGS	C
Well Volumes Purged	0.42	C	Vol		Field			11/4/21 15:37	BGS	C


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ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3210476001	1	FFMP019W	S4500HB-11	pH
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.				
3210476001	2	FFMP019W	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3210476001	4	FFMP019W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3210476002	1	FFMP018W	S4500HB-11	pH
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.				
3210476002	2	FFMP018W	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3210476002	4	FFMP018W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3210476003	1	FFMP033W	S4500HB-11	pH
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.				
3210476003	2	FFMP033W	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3210476003	4	FFMP033W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3210476004	1	FFMP034W	S4500HB-11	pH
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.				
3210476004	2	FFMP034W	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3210476004	4	FFMP034W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3210476005	1	FFMP02SW	S4500HB-11	pH
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.				
3210476005	2	FFMP02SW	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3210476005	3	FFMP02SW	SW846 9066	Phenolics
The QC sample type MS for method 420.4/9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as -2.95 and the control limits were 90 to 110.				
3210476005	4	FFMP02SW	SW846 9066	Phenolics
The QC sample type MSD for method 420.4/9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as -3.65 and the control limits were 90 to 110.				
3210476005	6	FFMP02SW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				

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ANALYTICAL RESULTS

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

3210476006	1	FFMP02DW	S4500HB-11	pH
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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.

3210476006	2	FFMP02DW	SM2130B-2011	Turbidity
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This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.

3210476006	4	FFMP02DW	SM2320B-2011	Alkalinity, Total
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The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO₃/L.

3210476006	E	FFMP02DW	EPA 300.0	Chloride
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Result reported exceeds instrument calibration

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3210476001	FFMP019W	ASTM D6919-09		
3210476001	FFMP019W	EPA 300.0		
3210476001	FFMP019W	EPA 410.4		
3210476001	FFMP019W	Field		
3210476001	FFMP019W	S2540C-11		
3210476001	FFMP019W	S4500HB-11		
3210476001	FFMP019W	SM2130B-2011		
3210476001	FFMP019W	SM2320B-2011		
3210476001	FFMP019W	SW846 6010C	SW846 3015	
3210476001	FFMP019W	SW846 8260B		
3210476001	FFMP019W	SW846 9050A		
3210476001	FFMP019W	SW846 9060A		
3210476001	FFMP019W	SW846 9066	420.4/9066	
3210476002	FFMP018W	ASTM D6919-09		
3210476002	FFMP018W	EPA 300.0		
3210476002	FFMP018W	EPA 410.4		
3210476002	FFMP018W	Field		
3210476002	FFMP018W	S2540C-11		
3210476002	FFMP018W	S4500HB-11		
3210476002	FFMP018W	SM2130B-2011		
3210476002	FFMP018W	SM2320B-2011		
3210476002	FFMP018W	SW846 6010C	SW846 3015	
3210476002	FFMP018W	SW846 8260B		
3210476002	FFMP018W	SW846 9050A		
3210476002	FFMP018W	SW846 9060A		
3210476002	FFMP018W	SW846 9066	420.4/9066	
3210476003	FFMP033W	ASTM D6919-09		
3210476003	FFMP033W	EPA 300.0		
3210476003	FFMP033W	EPA 410.4		
3210476003	FFMP033W	Field		
3210476003	FFMP033W	S2540C-11		
3210476003	FFMP033W	S4500HB-11		
3210476003	FFMP033W	SM2130B-2011		
3210476003	FFMP033W	SM2320B-2011		
3210476003	FFMP033W	SW846 6010C	SW846 3015	
3210476003	FFMP033W	SW846 8260B		
3210476003	FFMP033W	SW846 9050A		
3210476003	FFMP033W	SW846 9060A		
3210476003	FFMP033W	SW846 9066	420.4/9066	
3210476004	FFMP034W	ASTM D6919-09		
3210476004	FFMP034W	EPA 300.0		
3210476004	FFMP034W	EPA 410.4		
3210476004	FFMP034W	Field		
3210476004	FFMP034W	S2540C-11		
3210476004	FFMP034W	S4500HB-11		
3210476004	FFMP034W	SM2130B-2011		

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3210476 4TH QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3210476004	FFMP034W	SM2320B-2011		
3210476004	FFMP034W	SW846 6010C	SW846 3015	
3210476004	FFMP034W	SW846 8260B		
3210476004	FFMP034W	SW846 9050A		
3210476004	FFMP034W	SW846 9060A		
3210476004	FFMP034W	SW846 9066	420.4/9066	
3210476005	FFMP02SW	ASTM D6919-09		
3210476005	FFMP02SW	EPA 300.0		
3210476005	FFMP02SW	EPA 410.4		
3210476005	FFMP02SW	Field		
3210476005	FFMP02SW	S2540C-11		
3210476005	FFMP02SW	S4500HB-11		
3210476005	FFMP02SW	SM2130B-2011		
3210476005	FFMP02SW	SM2320B-2011		
3210476005	FFMP02SW	SW846 6010C	SW846 3015	
3210476005	FFMP02SW	SW846 8260B		
3210476005	FFMP02SW	SW846 9050A		
3210476005	FFMP02SW	SW846 9060A		
3210476005	FFMP02SW	SW846 9066	420.4/9066	
3210476006	FFMP02DW	ASTM D6919-09		
3210476006	FFMP02DW	EPA 300.0		
3210476006	FFMP02DW	EPA 410.4		
3210476006	FFMP02DW	Field		
3210476006	FFMP02DW	S2540C-11		
3210476006	FFMP02DW	S4500HB-11		
3210476006	FFMP02DW	SM2130B-2011		
3210476006	FFMP02DW	SM2320B-2011		
3210476006	FFMP02DW	SW846 6010C	SW846 3015	
3210476006	FFMP02DW	SW846 8260B		
3210476006	FFMP02DW	SW846 9050A		
3210476006	FFMP02DW	SW846 9060A		
3210476006	FFMP02DW	SW846 9066	420.4/9066	

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 311 Filling Mill Road • Middletown, PA 17057 • Phone: 717.944.5541 • Fax: 717.944.1430 • www.alsenv.com

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

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#: Frey Farm Quarterly (GWMP)
 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 ☒ N Approved By: dbrown@LCSWMA.com

Email? ☒ Y ☒ N No.: (717) 397-9973

Fax? ☒ Y ☒ N

Sample Description/Location (as it will appear on the lab report)

Sample Date Time

1. FFMP019W 11/04/21 1023

2. FFMP018W 11/04/21 1115

3. FFMP033W 11/04/21 1233

4. FFMP034W 11/04/21 1357

5. FFMP02SW 11/04/21 1428

6. FFMP02DW 11/04/21 1537

7

8

9

10

Project Comments:

Relinquished By/ Company Name

Date Time

1-4-21 16042

4

6

8

10

LOGGED BY (signature):

REVIEWED BY (signature):

Received By / Company Name

Date Time

11/4/21 1654

4

6

8

10

EDDS: Format Type-

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

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

* G=Grab; C=Composite

Rev 8/04

Generated by ALS



3210476

Container Type

Container Size

Preservative

AG

AW

CG

PL

PL

PL

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Cooler Temp: 1 Therm ID: 574

No. of Coolers: Y N Initial

Custody Seals Present?

(if present) Seals Intact?

Received on Ice?

COCILabels Complete/Accurate?

Cont. in Good Cond.?

Correct Containers?

Correct Sample Volumes?

Correct Preservation?

Headspace/Volatiles?

Courier/Tracking #:

Sample/COC Comments

ALS Field Services: ☐ Pickup ☐ Labor

☐ Composite Sampling ☐ Rental Equipment

☐ Other:

Standard

CLP-like

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Custody Seals Present?

(if present) Seals Intact?

Received on Ice?

COCILabels Complete/Accurate?

Cont. in Good Cond.?

Correct Containers?

Correct Sample Volumes?

Correct Preservation?

Headspace/Volatiles?

Courier/Tracking #:

Sample/COC Comments

ALS Field Services: ☐ Pickup ☐ Labor

☐ Composite Sampling ☐ Rental Equipment

☐ Other:

Standard

CLP-like

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Custody Seals Present?

(if present) Seals Intact?

Received on Ice?

COCILabels Complete/Accurate?

Cont. in Good Cond.?

Correct Containers?

Correct Sample Volumes?

Correct Preservation?

Headspace/Volatiles?

Courier/Tracking #:

Sample/COC Comments

ALS Field Services: ☐ Pickup ☐ Labor

☐ Composite Sampling ☐ Rental Equipment

☐ Other:

Standard

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Custody Seals Present?



301 Fulling Mill Road
Middletown, PA 17057

P: (717) 944-5541

F: (717) 944-1430

3210476

Lancaster County Solid Waste
Authority

tion of Sample Receipt Form

Client:

Initials:

Date:

AS

11/15/21

AS
11/15/21

1. Were airbills / tracking numbers present and recorded?.....	NONE	YES	NO
Tracking number: _____			
2. Are Custody Seals on shipping containers intact?.....	NONE	YES	NO
3. Are Custody Seals on sample containers intact?.....	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present?.....		YES	NO
5. Are the COC and bottle labels complete, legible and in agreement?.....		YES	NO
5a. Does the COC contain sample locations?.....		YES	NO
5b. Does the COC contain date and time of sample collection for all samples?.....		YES	NO
5c. Does the COC contain sample collectors name?.....		YES	NO
5d. Does the COC note the type(s) of preservation for all bottles?.....		YES	NO
5e. Does the COC note the number of bottles submitted for each sample?.....		YES	NO
5f. Does the COC note the type of sample, composite or grab?.....		YES	NO
5g. Does the COC note the matrix of the sample(s)?.....		YES	NO
6. Are all aqueous samples requiring preservation preserved correctly? ¹	N/A	YES	NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?.....		YES	NO
8. Are all samples within holding times for the requested analyses?.....		YES	NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.).....		YES	NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?.....	N/A	YES	NO
11. Were the samples received on ice?.....		YES	NO
12. Were sample temperatures measured at 0.0-6.0°C.....		YES	NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below.....		YES	NO
13a. Are the samples required for SDWA compliance reporting?.....	N/A	YES	NO
13b. Did the client provide a SDWA PWS ID#?.....	N/A	YES	NO
13c. Are all aqueous unpreserved SDWA samples pH 5-9?.....	N/A	YES	NO
13d. Did the client provide the SDWA sample location ID/Description?.....	N/A	YES	NO
13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?.....	N/A	YES	NO

Cooler #: _____

Temperature (°C): 1 _____

Thermometer ID: 574 _____

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

¹Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

December 16, 2021

Mr. Daniel Brown
Lancaster County Solid Waste Authority
1299 Hbg Pike, P.O. Box 4425
Lancaster, PA 17604

Certificate of Analysis

Project Name:	FREY FARM	Workorder:	3211130
Purchase Order:	PO-1000371	Workorder ID:	4TH QTR 2021 GWMP-FORM 19Q

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Friday, November 5, 2021.

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 Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

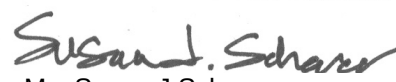
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications 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 Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Ashley Gichuki , Ms. Jordan Gallagher , Mr. Jeff Musser

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


Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3211130001	FFMP017W	Ground Water	11/5/2021 09:47	11/5/2021 17:10	Mr. Brian G Shade
3211130002	FFMP031W	Ground Water	11/5/2021 11:03	11/5/2021 17:10	Mr. Brian G Shade
3211130003	FFMP002W	Ground Water	11/5/2021 11:34	11/5/2021 17:10	Mr. Brian G Shade
3211130004	FFMP032W	Ground Water	11/5/2021 14:36	11/5/2021 17:10	Mr. Brian G Shade
3211130005	FIELD BLANK	Water	11/5/2021 15:06	11/5/2021 17:10	Mr. Brian G Shade
3211130006	TRIP BLANK	Ground Water	11/5/2021 17:10	11/5/2021 17:10	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

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

Standard Acronyms/Flags

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

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PROJECT SUMMARY

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

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ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130001**
Sample ID: **FFMP017W**

Date Collected: 11/5/2021 09:47 Matrix: Ground Water
Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/13/21 04:56	VLM	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/13/21 04:56	VLM	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	82.6	C	%	62 - 133	SW846 8260B			11/13/21 04:56	VLM	G
4-Bromofluorobenzene (S)	94.3	C	%	79 - 114	SW846 8260B			11/13/21 04:56	VLM	G
Dibromofluoromethane (S)	82.3	C	%	78 - 116	SW846 8260B			11/13/21 04:56	VLM	G
Toluene-d8 (S)	81.8	C	%	76 - 127	SW846 8260B			11/13/21 04:56	VLM	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	131	C	mg/L	5	SM2320B-2011			11/16/21 23:51	JXM	B
Alkalinity, Total	131	C,7	mg/L	5	SM2320B-2011			11/16/21 23:51	JXM	I
Ammonia-N	0.226	C	mg/L	0.100	ASTM D6919-09			11/18/21 06:34	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 09:05	ALK	A
Chloride	299	C,E	mg/L	2.0	EPA 300.0			12/3/21 16:14	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			12/3/21 16:14	GJB	B
Nitrate-N	1.8	C,1	mg/L	0.20	EPA 300.0			12/3/21 16:14	GJB	B
pH	7.76	C,2	pH_Units		S4500HB-11			11/16/21 23:51	JXM	B
Phenolics	ND	C,4,5	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	1590	C	umhos/cm	2	SW846 9050A			11/16/21 19:18	MBS	B
Sulfate	77.2	C	mg/L	2.0	EPA 300.0			12/3/21 16:14	GJB	B
Total Dissolved Solids	802	C	mg/L	25	S2540C-11			11/12/21 11:34	AKH	B
Total Organic Carbon (TOC)	2.5	C	mg/L	0.50	SW846 9060A			11/11/21 22:12	PAG	D

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ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130001**
Sample ID: **FFMP017W**

Date Collected: 11/5/2021 09:47 Matrix: Ground Water
Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Turbidity	0.14	C,3	NTU	0.10	SM2130B-2011			12/1/21 13:02	BXD	B
METALS										
Calcium, Total	98.1	C	mg/L	0.11	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:22	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:22	SRT	J1
Magnesium, Total	39.4	C	mg/L	0.11	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:22	SRT	J1
Manganese, Total	1.6	C	mg/L	0.0056	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:22	SRT	J1
Potassium, Total	7.9	C	mg/L	0.56	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:22	SRT	J1
Sodium, Total	92.8	C	mg/L	0.56	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:22	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	40.45	C	Feet		Field			11/5/21 09:47	BGS	C
Dissolved Oxygen	ND	C	mg/L	0.01	Field			11/5/21 09:47	BGS	C
Elev Top MW Casing above MSL	480.70	C	Feet		Field			11/5/21 09:47	BGS	C
Flow Rate	1.80	C	gal/min		Field			11/5/21 09:47	BGS	C
Ground Water Elevation	440.25	C	ft/MSL		Field			11/5/21 09:47	BGS	C
Oxidation-Reduction Potential	206	C	mV		Field			11/5/21 09:47	BGS	C
pH, Field (SM4500B)	5.91	C	pH_Units		Field			11/5/21 09:47	BGS	C
Sample Depth	135.00	C	Feet		Field			11/5/21 09:47	BGS	C
Specific Conductance, Field	1871	C	umhos/cm	1	Field			11/5/21 09:47	BGS	C
Temperature	12.67	C	Deg. C		Field			11/5/21 09:47	BGS	C
Total Well Depth	150.50	C	Feet		Field			11/5/21 09:47	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/5/21 09:47	BGS	C
Volume in Water Column	161.77	C	Gallons		Field			11/5/21 09:47	BGS	C
Water Level After Purge	45.54	C	Feet		Field			11/5/21 09:47	BGS	C
Well Volumes Purged	0.78	C	Vol		Field			11/5/21 09:47	BGS	C


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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130002**
Sample ID: **FFMP031W**

Date Collected: 11/5/2021 11:03 Matrix: Ground Water
Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/13/21 05:18	VLM	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:18	VLM	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	82.4	C	%	62 - 133	SW846 8260B			11/13/21 05:18	VLM	G
4-Bromofluorobenzene (S)	92.7	C	%	79 - 114	SW846 8260B			11/13/21 05:18	VLM	G
Dibromofluoromethane (S)	81.7	C	%	78 - 116	SW846 8260B			11/13/21 05:18	VLM	G
Toluene-d8 (S)	82.1	C	%	76 - 127	SW846 8260B			11/13/21 05:18	VLM	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	65	C	mg/L	5	SM2320B-2011			11/16/21 23:51	JXM	B
Alkalinity, Total	65	C,5	mg/L	5	SM2320B-2011			11/16/21 23:51	JXM	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			11/18/21 04:13	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/21/21 09:00	ALK	A
Chloride	24.5	C	mg/L	2.0	EPA 300.0			12/3/21 16:28	GJB	B
Fluoride	0.20	C	mg/L	0.20	EPA 300.0			12/3/21 16:28	GJB	B
Nitrate-N	ND	C,1	mg/L	0.20	EPA 300.0			12/3/21 16:28	GJB	B
pH	8.10	C,2	pH_Units		S4500HB-11			11/16/21 23:51	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	395	C	umhos/cm	1	SW846 9050A			11/16/21 19:18	MBS	B
Sulfate	46.7	C	mg/L	2.0	EPA 300.0			12/3/21 16:28	GJB	B
Total Dissolved Solids	202	C	mg/L	25	S2540C-11			11/12/21 11:34	AKH	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			11/11/21 22:12	PAG	D
Turbidity	15.7	C,3	NTU	0.10	SM2130B-2011			12/1/21 13:02	BXD	B

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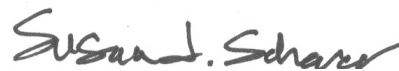
ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130002**
Sample ID: **FFMP031W**

Date Collected: 11/5/2021 11:03 Matrix: Ground Water
Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	42.7	C	mg/L	0.11	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:32	SRT	J1
Iron, Total	3.7	C	mg/L	0.067	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:32	SRT	J1
Magnesium, Total	4.1	C	mg/L	0.11	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:32	SRT	J1
Manganese, Total	0.34	C	mg/L	0.0056	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:32	SRT	J1
Potassium, Total	1.6	C	mg/L	0.56	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:32	SRT	J1
Sodium, Total	9.8	C	mg/L	0.56	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:32	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	66.98	C	Feet		Field			11/5/21 11:03	BGS	C
Dissolved Oxygen	2.87	C	mg/L	0.01	Field			11/5/21 11:03	BGS	C
Elev Top MW Casing above MSL	612.66	C	Feet		Field			11/5/21 11:03	BGS	C
Flow Rate	1.62	C	gal/min		Field			11/5/21 11:03	BGS	C
Ground Water Elevation	545.68	C	ft/MSL		Field			11/5/21 11:03	BGS	C
Oxidation-Reduction Potential	-168	C	mV		Field			11/5/21 11:03	BGS	C
pH, Field (SM4500B)	7.73	C	pH_Units		Field			11/5/21 11:03	BGS	C
Sample Depth	130.00	C	Feet		Field			11/5/21 11:03	BGS	C
Specific Conductance, Field	441	C	umhos/cm	1	Field			11/5/21 11:03	BGS	C
Temperature	14.65	C	Deg. C		Field			11/5/21 11:03	BGS	C
Total Well Depth	142.70	C	Feet		Field			11/5/21 11:03	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/5/21 11:03	BGS	C
Volume in Water Column	111.31	C	Gallons		Field			11/5/21 11:03	BGS	C
Water Level After Purge	101.76	C	Feet		Field			11/5/21 11:03	BGS	C
Well Volumes Purged	0.87	C	Vol		Field			11/5/21 11:03	BGS	C


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ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130003**

Date Collected: 11/5/2021 11:34

Matrix: Ground Water

Sample ID: **FFMP002W**

Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/13/21 05:41	VLM	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/13/21 05:41	VLM	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	82.5	C	%	62 - 133	SW846 8260B			11/13/21 05:41	VLM	G
4-Bromofluorobenzene (S)	92.5	C	%	79 - 114	SW846 8260B			11/13/21 05:41	VLM	G
Dibromofluoromethane (S)	81	C	%	78 - 116	SW846 8260B			11/13/21 05:41	VLM	G
Toluene-d8 (S)	81.8	C	%	76 - 127	SW846 8260B			11/13/21 05:41	VLM	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND	C	mg/L	5	SM2320B-2011			11/16/21 23:51	JXM	B
Alkalinity, Total	ND	C,5	mg/L	5	SM2320B-2011			11/16/21 23:51	JXM	I
Ammonia-N	0.132	C	mg/L	0.100	ASTM D6919-09			11/18/21 08:04	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 09:05	ALK	A
Chloride	21.0	C	mg/L	2.0	EPA 300.0			12/3/21 16:42	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			12/3/21 16:42	GJB	B
Nitrate-N	20.5	C,1, E	mg/L	0.20	EPA 300.0			12/3/21 16:42	GJB	B
pH	5.70	C,2	pH_Units		S4500HB-11			11/16/21 23:51	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	352	C	umhos/cm	1	SW846 9050A			11/16/21 19:18	MBS	B
Sulfate	16.0	C	mg/L	2.0	EPA 300.0			12/3/21 16:42	GJB	B
Total Dissolved Solids	198	C	mg/L	25	S2540C-11			11/12/21 11:34	AKH	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			11/11/21 22:12	PAG	D

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ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130003**
Sample ID: **FFMP002W**

Date Collected: 11/5/2021 11:34 Matrix: Ground Water
Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Turbidity	0.33	C,3	NTU	0.10	SM2130B-2011			12/1/21 13:02	BXD	B
METALS										
Calcium, Total	18.0	C	mg/L	0.11	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:40	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:40	SRT	J1
Magnesium, Total	7.7	C	mg/L	0.11	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:40	SRT	J1
Manganese, Total	0.23	C	mg/L	0.0056	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:40	SRT	J1
Potassium, Total	1.5	C	mg/L	0.56	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:40	SRT	J1
Sodium, Total	13.5	C	mg/L	0.56	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:40	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	65.80	C	Feet		Field			11/5/21 11:34	BGS	C
Dissolved Oxygen	6.92	C	mg/L	0.01	Field			11/5/21 11:34	BGS	C
Elev Top MW Casing above MSL	613.20	C	Feet		Field			11/5/21 11:34	BGS	C
Flow Rate	1.05	C	gal/min		Field			11/5/21 11:34	BGS	C
Ground Water Elevation	547.40	C	ft/MSL		Field			11/5/21 11:34	BGS	C
Oxidation-Reduction Potential	270	C	mV		Field			11/5/21 11:34	BGS	C
pH, Field (SM4500B)	4.59	C	pH_Units		Field			11/5/21 11:34	BGS	C
Sample Depth	85.00	C	Feet		Field			11/5/21 11:34	BGS	C
Specific Conductance, Field	377	C	umhos/cm	1	Field			11/5/21 11:34	BGS	C
Temperature	14.45	C	Deg. C		Field			11/5/21 11:34	BGS	C
Total Well Depth	90.02	C	Feet		Field			11/5/21 11:34	BGS	C
Turbidity, Field	ND	C	NTU	1	Field			11/5/21 11:34	BGS	C
Volume in Water Column	35.60	C	Gallons		Field			11/5/21 11:34	BGS	C
Water Level After Purge	77.20	C	Feet		Field			11/5/21 11:34	BGS	C
Well Volumes Purged	0.59	C	Vol		Field			11/5/21 11:34	BGS	C


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ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130004**

Date Collected: 11/5/2021 14:36

Matrix: Ground Water

Sample ID: **FFMP032W**

Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/13/21 06:04	VLM	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/13/21 06:04	VLM	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	84.9	C	%	62 - 133	SW846 8260B			11/13/21 06:04	VLM	G
4-Bromofluorobenzene (S)	98.2	C	%	79 - 114	SW846 8260B			11/13/21 06:04	VLM	G
Dibromofluoromethane (S)	83.9	C	%	78 - 116	SW846 8260B			11/13/21 06:04	VLM	G
Toluene-d8 (S)	82.4	C	%	76 - 127	SW846 8260B			11/13/21 06:04	VLM	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	62	C	mg/L	5	SM2320B-2011			11/16/21 23:51	JXM	B
Alkalinity, Total	62	C,5	mg/L	5	SM2320B-2011			11/16/21 23:51	JXM	I
Ammonia-N	0.615	C	mg/L	0.100	ASTM D6919-09			11/18/21 04:26	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 09:05	ALK	A
Chloride	21.8	C	mg/L	2.0	EPA 300.0			12/3/21 16:56	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			12/3/21 16:56	GJB	B
Nitrate-N	ND	C,1	mg/L	0.20	EPA 300.0			12/3/21 16:56	GJB	B
pH	8.00	C,2	pH_Units		S4500HB-11			11/16/21 23:51	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	214	C	umhos/cm	1	SW846 9050A			12/2/21 22:30	JSE	B
Sulfate	ND	C	mg/L	2.0	EPA 300.0			12/3/21 16:56	GJB	B
Total Dissolved Solids	114	C	mg/L	25	S2540C-11			11/12/21 11:34	AKH	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			11/11/21 22:12	PAG	D
Turbidity	110	C,3	NTU	0.10	SM2130B-2011			12/1/21 13:02	BXD	B

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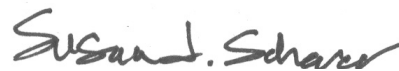
ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130004**
Sample ID: **FFMP032W**

Date Collected: 11/5/2021 14:36 Matrix: Ground Water
Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	14.5	C	mg/L	0.11	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:43	SRT	J1
Iron, Total	7.1	C	mg/L	0.067	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:43	SRT	J1
Magnesium, Total	5.5	C	mg/L	0.11	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:43	SRT	J1
Manganese, Total	0.59	C	mg/L	0.0056	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:43	SRT	J1
Potassium, Total	1.6	C	mg/L	0.56	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:43	SRT	J1
Sodium, Total	12.8	C	mg/L	0.56	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:43	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	50.19	C	Feet		Field			11/5/21 14:35	BGS	C
Dissolved Oxygen	1.19	C	mg/L	0.01	Field			11/5/21 14:35	BGS	C
Elev Top MW Casing above MSL	594.09	C	Feet		Field			11/5/21 14:35	BGS	C
Flow Rate	0.75	C	gal/min		Field			11/5/21 14:35	BGS	C
Ground Water Elevation	543.90	C	ft/MSL		Field			11/5/21 14:35	BGS	C
Oxidation-Reduction Potential	-112	C	mV		Field			11/5/21 14:35	BGS	C
pH, Field (SM4500B)	6.90	C	pH_Units		Field			11/5/21 14:35	BGS	C
Sample Depth	62.00	C	Feet		Field			11/5/21 14:35	BGS	C
Specific Conductance, Field	286	C	umhos/cm	1	Field			11/5/21 14:35	BGS	C
Temperature	15.18	C	Deg. C		Field			11/5/21 14:35	BGS	C
Total Well Depth	77.60	C	Feet		Field			11/5/21 14:35	BGS	C
Turbidity, Field	8	C	NTU	1	Field			11/5/21 14:35	BGS	C
Volume in Water Column	40.29	C	Gallons		Field			11/5/21 14:35	BGS	C
Water Level After Purge	55.41	C	Feet		Field			11/5/21 14:35	BGS	C
Well Volumes Purged	0.30	C	Vol		Field			11/5/21 14:35	BGS	C


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ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130005**
Sample ID: **FIELD BLANK**

Date Collected: 11/5/2021 15:06 Matrix: Water
Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/13/21 01:55	VLM	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/13/21 01:55	VLM	G
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	82.4	C	%	62 - 133	SW846 8260B			11/13/21 01:55	VLM	G
4-Bromofluorobenzene (S)	96.3	C	%	79 - 114	SW846 8260B			11/13/21 01:55	VLM	G
Dibromofluoromethane (S)	82	C	%	78 - 116	SW846 8260B			11/13/21 01:55	VLM	G
Toluene-d8 (S)	83.4	C	%	76 - 127	SW846 8260B			11/13/21 01:55	VLM	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND	C	mg/L	5	SM2320B-2011			11/16/21 23:51	JXM	B
Alkalinity, Total	ND	C,5	mg/L	5	SM2320B-2011			11/18/21 23:57	JXM	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			11/19/21 22:22	ALK	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			11/12/21 09:05	ALK	A
Chloride	ND	C	mg/L	2.0	EPA 300.0			12/3/21 17:09	GJB	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			12/3/21 17:09	GJB	B
Nitrate-N	ND	C,1	mg/L	0.20	EPA 300.0			12/3/21 17:09	GJB	B
pH	5.67	C,2	pH_Units		S4500HB-11			11/18/21 23:57	JXM	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	11/10/21 16:13	MXF	11/12/21 12:41	MXF	F
Specific Conductance	5	C	umhos/cm	1	SW846 9050A			11/16/21 19:18	MBS	B
Sulfate	ND	C	mg/L	2.0	EPA 300.0			12/3/21 17:09	GJB	B
Total Dissolved Solids	ND	C	mg/L	25	S2540C-11			11/12/21 11:34	AKH	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			11/12/21 01:19	PAG	D
Turbidity	0.62	C,3	NTU	0.10	SM2130B-2011			12/1/21 13:02	BXD	B

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ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130005**
Sample ID: **FIELD BLANK**

Date Collected: 11/5/2021 15:06 Matrix: Water
Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	ND	C	mg/L	0.11	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:54	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:54	SRT	J1
Magnesium, Total	ND	C	mg/L	0.11	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:54	SRT	J1
Manganese, Total	ND	C	mg/L	0.0056	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:54	SRT	J1
Potassium, Total	ND	C	mg/L	0.56	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:54	SRT	J1
Sodium, Total	ND	C	mg/L	0.56	SW846 6010C	11/17/21 00:39	SXC	11/17/21 10:54	SRT	J1


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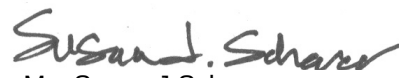
ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID: **3211130006**
Sample ID: **TRIP BLANK**

Date Collected: 11/5/2021 17:10 Matrix: Ground Water
Date Received: 11/5/2021 17:10

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
Toluene	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			11/12/21 12:43	DPC	A
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			11/12/21 12:43	DPC	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	102	C	%	62 - 133	SW846 8260B			11/12/21 12:43	DPC	A
4-Bromofluorobenzene (S)	99.7	C	%	79 - 114	SW846 8260B			11/12/21 12:43	DPC	A
Dibromofluoromethane (S)	99	C	%	78 - 116	SW846 8260B			11/12/21 12:43	DPC	A
Toluene-d8 (S)	103	C	%	76 - 127	SW846 8260B			11/12/21 12:43	DPC	A


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ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3211130001	1	FFMP017W	EPA 300.0	Nitrate-N
Analyte was analyzed past the 48 hour holding time.				
3211130001	2	FFMP017W	S4500HB-11	pH
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.				
3211130001	3	FFMP017W	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3211130001	4	FFMP017W	SW846 9066	Phenolics
The QC sample type MS for method 420.4/9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as 2.11 and the control limits were 90 to 110.				
3211130001	5	FFMP017W	SW846 9066	Phenolics
The QC sample type MSD for method 420.4/9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as 2.14 and the control limits were 90 to 110.				
3211130001	7	FFMP017W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3211130001	E	FFMP017W	EPA 300.0	Chloride
Result reported exceeds instrument calibration				
3211130002	1	FFMP031W	EPA 300.0	Nitrate-N
Analyte was analyzed past the 48 hour holding time.				
3211130002	2	FFMP031W	S4500HB-11	pH
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.				
3211130002	3	FFMP031W	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3211130002	5	FFMP031W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3211130003	1	FFMP002W	EPA 300.0	Nitrate-N
Analyte was analyzed past the 48 hour holding time.				
3211130003	2	FFMP002W	S4500HB-11	pH
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.				
3211130003	3	FFMP002W	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3211130003	5	FFMP002W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3211130003	E	FFMP002W	EPA 300.0	Nitrate-N
Result reported exceeds instrument calibration				
3211130004	1	FFMP032W	EPA 300.0	Nitrate-N
Analyte was analyzed past the 48 hour holding time.				

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ANALYTICAL RESULTS

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

3211130004	2	FFMP032W	S4500HB-11	pH
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.				
3211130004	3	FFMP032W	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3211130004	5	FFMP032W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3211130005	1	FIELD BLANK	EPA 300.0	Nitrate-N
Analyte was analyzed past the 48 hour holding time.				
3211130005	2	FIELD BLANK	S4500HB-11	pH
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.				
3211130005	3	FIELD BLANK	SM2130B-2011	Turbidity
This sample was analyzed after the 48 hour holding time for Turbidity as required by the method.				
3211130005	5	FIELD BLANK	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3211130001	FFMP017W	ASTM D6919-09		
3211130001	FFMP017W	EPA 300.0		
3211130001	FFMP017W	EPA 410.4		
3211130001	FFMP017W	Field		
3211130001	FFMP017W	S2540C-11		
3211130001	FFMP017W	S4500HB-11		
3211130001	FFMP017W	SM2130B-2011		
3211130001	FFMP017W	SM2320B-2011		
3211130001	FFMP017W	SW846 6010C	SW846 3015	
3211130001	FFMP017W	SW846 8260B		
3211130001	FFMP017W	SW846 9050A		
3211130001	FFMP017W	SW846 9060A		
3211130001	FFMP017W	SW846 9066	420.4/9066	
3211130002	FFMP031W	ASTM D6919-09		
3211130002	FFMP031W	EPA 300.0		
3211130002	FFMP031W	EPA 410.4		
3211130002	FFMP031W	Field		
3211130002	FFMP031W	S2540C-11		
3211130002	FFMP031W	S4500HB-11		
3211130002	FFMP031W	SM2130B-2011		
3211130002	FFMP031W	SM2320B-2011		
3211130002	FFMP031W	SW846 6010C	SW846 3015	
3211130002	FFMP031W	SW846 8260B		
3211130002	FFMP031W	SW846 9050A		
3211130002	FFMP031W	SW846 9060A		
3211130002	FFMP031W	SW846 9066	420.4/9066	
3211130003	FFMP002W	ASTM D6919-09		
3211130003	FFMP002W	EPA 300.0		
3211130003	FFMP002W	EPA 410.4		
3211130003	FFMP002W	Field		
3211130003	FFMP002W	S2540C-11		
3211130003	FFMP002W	S4500HB-11		
3211130003	FFMP002W	SM2130B-2011		
3211130003	FFMP002W	SM2320B-2011		
3211130003	FFMP002W	SW846 6010C	SW846 3015	
3211130003	FFMP002W	SW846 8260B		
3211130003	FFMP002W	SW846 9050A		
3211130003	FFMP002W	SW846 9060A		
3211130003	FFMP002W	SW846 9066	420.4/9066	
3211130004	FFMP032W	ASTM D6919-09		
3211130004	FFMP032W	EPA 300.0		
3211130004	FFMP032W	EPA 410.4		
3211130004	FFMP032W	Field		
3211130004	FFMP032W	S2540C-11		
3211130004	FFMP032W	S4500HB-11		
3211130004	FFMP032W	SM2130B-2011		

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3211130 4TH QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3211130004	FFMP032W	SM2320B-2011		
3211130004	FFMP032W	SW846 6010C	SW846 3015	
3211130004	FFMP032W	SW846 8260B		
3211130004	FFMP032W	SW846 9050A		
3211130004	FFMP032W	SW846 9060A		
3211130004	FFMP032W	SW846 9066	420.4/9066	
3211130005	FIELD BLANK	ASTM D6919-09		
3211130005	FIELD BLANK	EPA 300.0		
3211130005	FIELD BLANK	EPA 410.4		
3211130005	FIELD BLANK	S2540C-11		
3211130005	FIELD BLANK	S4500HB-11		
3211130005	FIELD BLANK	SM2130B-2011		
3211130005	FIELD BLANK	SM2320B-2011		
3211130005	FIELD BLANK	SW846 6010C	SW846 3015	
3211130005	FIELD BLANK	SW846 8260B		
3211130005	FIELD BLANK	SW846 9050A		
3211130005	FIELD BLANK	SW846 9060A		
3211130005	FIELD BLANK	SW846 9066	420.4/9066	
3211130006	TRIP BLANK	SW846 8260B		

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



3211130

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#: Frey Farm Quarterly (GWMP)
Bill To: Lancaster County Solid Waste MA

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

Date Required: _____ **Approved By:** _____
Email? ☒ Y ☐ N **Approved By:** dbrown@lcswwa.com
Fax? ☒ Y ☐ N **Approved By:** _____

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time
1. FFMP017W	11/05/21	0947
2. FFMP031W	11/05/21	1103
3. FFMP002W	11/05/21	1134
4. FFMP032W	11/05/21	1436
5. Field Blank	11/05/21	1506
6. Trip Blank	11/05/21	1700
7		
8		
9		
10		

Project Comments:

Requisitioned By / Company Name: ALS

Date: 11-5-21 Time: 1710

Received By / Company Name: [Signature] Date: 11/5/21 Time: 1710

LOGGED BY (signature): _____

REVIEWED BY (signature): _____

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

Enter Number of Containers Per Sample or Field Results Below.	TOC	O-H	VOC - Form 190	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SPC, F, SO4, TDS, NO3, Turb.	Alkalinity Bicarbonate
Matrix	2	1	2	X	1	1	1	1	1
G	2	1	2	X	1	1	1	1	1
GW	2	1	2	X	1	1	1	1	1
G	2	1	2	X	1	1	1	1	1
GW	2	1	2	X	1	1	1	1	1
G	2	1	2	X	1	1	1	1	1
GW	2	1	2	X	1	1	1	1	1
G	2	1	2	X	1	1	1	1	1
GW	2	1	2	X	1	1	1	1	1
G	2	1	2	X	1	1	1	1	1
GW	2	1	2	X	1	1	1	1	1

Cooler Temp: 4 **Therm ID:** 574

No. of Coolers: 4 **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? ☐
Headspace/Volatiles? ☐

Courier/Tracking #: _____

Sample/COC Comments

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

Special Processing

Standard ☐ **CLP-like** ☐ **USACE** ☐

State Samples Collected In ☐ NY ☐ NJ ☐ PA ☐ NC ☐

Sample Disposal ☐ Lab ☒ Special ☐

Reportable to PADEP? ☐ Yes ☐ No ☐

PWSID # _____

EDDS: Format Type _____



301 Fulling Mill Road
Middletown, PA 17057

P: (717) 944-5541

F: (717) 944-1430

3211130

Condition of Sam

Lancaster County Solid Waste
Authority

Client: _____ Work Order #: _____ Initials: MS Date: 11/9/21

1. Were airbills / tracking numbers present and recorded?.....	NONE	YES	NO
Tracking number: _____			
2. Are Custody Seals on shipping containers intact?.....	NONE	YES	NO
3. Are Custody Seals on sample containers intact?.....	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present?.....		YES	NO
5. Are the COC and bottle labels complete, legible and in agreement?.....		YES	NO
5a. Does the COC contain sample locations?.....		YES	NO
5b. Does the COC contain date and time of sample collection for all samples?.....		YES	NO
5c. Does the COC contain sample collectors name?.....		YES	NO
5d. Does the COC note the type(s) of preservation for all bottles?.....		YES	NO
5e. Does the COC note the number of bottles submitted for each sample?.....		YES	NO
5f. Does the COC note the type of sample, composite or grab?.....		YES	NO
5g. Does the COC note the matrix of the sample(s)?.....		YES	NO
6. Are all aqueous samples requiring preservation preserved correctly? ¹	N/A	YES	NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?.....		YES	NO
8. Are all samples within holding times for the requested analyses?.....		YES	NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.).....		YES	NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?.....	N/A	YES	NO
11. Were the samples received on ice?.....		YES	NO
12. Were sample temperatures measured at 0.0-6.0°C.....		YES	NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below.....		YES	NO
13a. Are the samples required for SDWA compliance reporting?.....	N/A	YES	NO
13b. Did the client provide a SDWA PWS ID#?.....	N/A	YES	NO
13c. Are all aqueous unpreserved SDWA samples pH 5-9?.....	N/A	YES	NO
13d. Did the client provide the SDWA sample location ID/Description?.....	N/A	YES	NO
13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?.....	N/A	YES	NO

Cooler #: _____

Temperature (°C): 4 _____

Thermometer ID: 574 _____

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

¹Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

Rev 1/20/2020



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 4TH QTR 2021 GWMP-FORM 19Q
Workorder 3210346
Report ID 151574 on 2/24/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 03, 2021.

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

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
3210346001	FFMP30RW	Ground Water	11/03/2021 10:41 AM	11/03/2021 4:37 PM	BGS	Analytical Laboratory Service
3210346002	FFMP04AW	Ground Water	11/03/2021 11:56 AM	11/03/2021 4:37 PM	BGS	Analytical Laboratory Service
3210346003	FFMP036W	Ground Water	11/03/2021 1:25 PM	11/03/2021 4:37 PM	BGS	Analytical Laboratory Service
3210346004	FFMP035W	Ground Water	11/03/2021 2:30 PM	11/03/2021 4:37 PM	BGS	Analytical Laboratory Service
3210346005	FFMP029W	Ground Water	11/03/2021 3:27 PM	11/03/2021 4:37 PM	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

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



Project Notations

This certificate of analysis was modified to correct the sample description for lab ID 3210346004 based on the email inquiry from Dan Brown on 12/15/21. The field sampling log was used to determine the corrected location. SJS 02/24/22

This WO has FFMP036W twice on the chain of custody. Please properly identify the samples that are on the COC/Lab Report.

Sample Notations

Lab ID	Sample ID	
3210346001	FFMP30RW	Sample temperature upon receipt at lab was greater than 6 °C.
3210346002	FFMP04AW	Sample temperature upon receipt at lab was greater than 6 °C.
3210346003	FFMP036W	Sample temperature upon receipt at lab was greater than 6 °C.
3210346004	FFMP035W	Sample temperature upon receipt at lab was greater than 6 °C.
3210346005	FFMP029W	Sample temperature upon receipt at lab was greater than 6 °C.

Result Notations

Notation #	
0	Result reported exceeds instrument calibration
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	The 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 analyzed after the 48 hour holding time for Turbidity as required by the method.



Client Sample ID	FFMP30RW	Collected	11/03/2021 10:41 AM
Lab Sample ID	3210346001	Lab Receipt	11/03/2021 4:37 PM

Volatiles - GC/MS SW846 8260B

Prep

Method	N/A	Container	3210346001-G(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260B	Fraction	VOA_Trace
Batch	784779	Dilution	1
Date	11/05/2021 1:38 AM	Analyst	PDK

RESULTS

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

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.10 %	62 - 133	
4-Bromofluorobenzene	460-00-4	109 %	79 - 114	
Dibromofluoromethane	1868-53-7	86.50 %	78 - 116	
Toluene-d8	2037-26-5	90.10 %	76 - 127	

Metals Analytical SW846 6010C

Prep

Method	SW846 3015	Container	3210346001-J(Nitric Acid)
Batch	786303	Aliquot	45 mL
Date	11/08/2021 6:02 PM	Tech.	JSE

Analysis

Method	SW846 6010C	Fraction	ICP_AES
Batch	786449	Dilution	1
Date	11/11/2021 2:19 PM	Analyst	SRT

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	32.6	mg/L	0.11	C
Iron, Total	7439-89-6	0.61	mg/L	0.067	C
Magnesium, Total	7439-95-4	16.6	mg/L	0.11	C
Manganese, Total	7439-96-5	2.0	mg/L	0.0056	C



Client Sample ID	FFMP30RW	Collected	11/03/2021 10:41 AM
Lab Sample ID	3210346001	Lab Receipt	11/03/2021 4:37 PM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	5.1	mg/L	0.56	C
Sodium, Total	7440-23-5	89.7	mg/L	0.56	C

Wet Chemistry (General) S2540C-11

Prep

Method	N/A	Container	3210346001-B(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	786452	Dilution	1
Date	11/09/2021 2:12 PM	Analyst	AKH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	494	mg/L	25	C

Wet Chemistry (General) EPA 300.0

Prep

Method	N/A	Container	3210346001-B(Unpreserved)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	EPA 300.0	Fraction	
Batch	785244	Dilution	2
Date	11/04/2021 5:20 PM	Analyst	GJB

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	203	mg/L	2.0	C,0
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	6.0	mg/L	0.20	C
Sulfate	SO4	26.6	mg/L	2.0	C

Wet Chemistry (General) EPA 410.4

Prep

Method	N/A	Container	3210346001-A(Sulfuric Acid)
Batch	N/A	Aliquot	2 mL
Date	N/A	Tech.	N/A

Analysis

Method	EPA 410.4	Fraction	
Batch	786593	Dilution	1
Date	11/12/2021 9:05 AM	Analyst	ALK

RESULTS

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



Client Sample ID	FFMP30RW	Collected	11/03/2021 10:41 AM
Lab Sample ID	3210346001	Lab Receipt	11/03/2021 4:37 PM

Wet Chemistry (General) SW846 9050A

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	SW846 9050A
<u>Batch</u>	N/A	<u>Batch</u>	786946
<u>Date</u>	N/A	<u>Date</u>	11/10/2021 3:25 PM
<u>Container</u>	3210346001-B(Unpreserved)	<u>Fraction</u>	
<u>Aliquot</u>	50 mL	<u>Dilution</u>	1
<u>Tech.</u>	N/A	<u>Analyst</u>	MBS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	369	umhos/cm	1	C

Wet Chemistry (General) SW846 9060A

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	SW846 9060A
<u>Batch</u>	N/A	<u>Batch</u>	786940
<u>Date</u>	N/A	<u>Date</u>	11/10/2021 10:58 PM
<u>Container</u>	3210346001-D(Hydrochloric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	6 mL	<u>Dilution</u>	1
<u>Tech.</u>	N/A	<u>Analyst</u>	PAG

RESULTS

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

Wet Chemistry (General) SW846 9066

Prep		Analysis	
<u>Method</u>	420.4/9066	<u>Method</u>	SW846 9066
<u>Batch</u>	786775	<u>Batch</u>	787302
<u>Date</u>	11/10/2021 4:12 PM	<u>Date</u>	11/12/2021 12:41 PM
<u>Container</u>	3210346001-F(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	100 mL	<u>Dilution</u>	1
<u>Tech.</u>	MXF	<u>Analyst</u>	MXF

RESULTS

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

Wet Chemistry (General) ASTM D6919-09

Prep		Analysis	
<u>Method</u>	N/A	<u>Method</u>	ASTM D6919-09
<u>Batch</u>	N/A	<u>Batch</u>	788368
<u>Date</u>	N/A	<u>Date</u>	11/18/2021 1:48 AM
<u>Container</u>	3210346001-A(Sulfuric Acid)	<u>Fraction</u>	
<u>Aliquot</u>	5 mL	<u>Dilution</u>	10
<u>Tech.</u>	N/A	<u>Analyst</u>	ALK



Client Sample ID	FFMP30RW	Collected	11/03/2021 10:41 AM
Lab Sample ID	3210346001	Lab Receipt	11/03/2021 4:37 PM

RESULTS

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

Wet Chemistry (General) SM2130B-2011

Prep

Method	N/A	Container	3210346001-B(Unpreserved)
Batch	N/A	Aliquot	25 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2130B-2011	Fraction	
Batch	788086	Dilution	1
Date	11/15/2021 3:01 PM	Analyst	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	9.70	NTU	0.10	C,3

Wet Chemistry (General) SM2320B-2011

Prep

Method	N/A	Container	3210346001-B(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	787208	Dilution	1
Date	11/12/2021 1:22 PM	Analyst	JXM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	30	mg/L	5	C

Wet Chemistry (General) SM2320B-2011

Prep

Method	N/A	Container	3210346001-I(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	787208	Dilution	1
Date	11/12/2021 1:22 PM	Analyst	JXM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	30	mg/L	5	C,1

Wet Chemistry (General) S4500HB-11



Project 4TH QTR 2021 GWMP-FORM 19Q
Workorder 3210346

Client Sample ID	FFMP30RW	Collected	11/03/2021 10:41 AM
Lab Sample ID	3210346001	Lab Receipt	11/03/2021 4:37 PM

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346001-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	S4500HB-11	<u>Fraction</u>	
<u>Batch</u>	787208	<u>Dilution</u>	1
<u>Date</u>	11/12/2021 1:22 PM	<u>Analyst</u>	JXM

RESULTS

<u>Compound</u>	<u>CAS No</u>	<u>Result</u> <u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
pH	PH	7.35 pH_Units		C,2

FLD Field

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346001-C(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	Field	<u>Fraction</u>	
<u>Batch</u>	789066	<u>Dilution</u>	1
<u>Date</u>	11/03/2021 10:41 AM	<u>Analyst</u>	BGS

RESULTS

<u>Compound</u>	<u>CAS No</u>	<u>Result</u> <u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
Depth to Water Level	DWL	34.94 Feet		C
Dissolved Oxygen	DO	1.63 mg/L	0.01	C
Elev Top MW Casing above MSL	781	562.30 Feet		C
Flow Rate	FRATE	2.03 gal/min		C
Ground Water Elevation	GWE	527.36 ft/MSL		C
Oxidation-Reduction Potential	ORP	321 mV		C
pH, Field (SM4500B)	PHF	5.19 pH_Units		C
Sample Depth	SD	85.00 Feet		C
Specific Conductance, Field	CONDF	992 umhos/cm	1	C
Temperature	Temp	13.34 Deg. C		C
Total Well Depth	TWD	94.20 Feet		C
Turbidity, Field	TURBF	5 NTU	1	C
Volume in Water Column	VWC	87.11 Gallons		C
Water Level After Purge	LAP	54.91 Feet		C
Well Volumes Purged	WVP	1.40 Vol		C



Client Sample ID	FFMP04AW	Collected	11/03/2021 11:56 AM
Lab Sample ID	3210346002	Lab Receipt	11/03/2021 4:37 PM

Volatiles - GC/MS SW846 8260B

Prep				Analysis			
<u>Method</u>	N/A	<u>Container</u>	3210346002-G(Hydrochloric Acid)	<u>Method</u>	SW846 8260B	<u>Fraction</u>	VOA_Trace
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL	<u>Batch</u>	784779	<u>Dilution</u>	1
<u>Date</u>	N/A	<u>Tech.</u>	N/A	<u>Date</u>	11/05/2021 2:01 AM	<u>Analyst</u>	PDK

RESULTS

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

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	95.10 %	62 - 133	
4-Bromofluorobenzene	460-00-4	112 %	79 - 114	
Dibromofluoromethane	1868-53-7	87.50 %	78 - 116	
Toluene-d8	2037-26-5	88.50 %	76 - 127	

Metals Analytical SW846 6010C

Prep				Analysis			
<u>Method</u>	SW846 3015	<u>Container</u>	3210346002-J(Nitric Acid)	<u>Method</u>	SW846 6010C	<u>Fraction</u>	ICP_AES
<u>Batch</u>	786303	<u>Aliquot</u>	45 mL	<u>Batch</u>	786449	<u>Dilution</u>	1
<u>Date</u>	11/08/2021 6:02 PM	<u>Tech.</u>	JSE	<u>Date</u>	11/11/2021 2:22 PM	<u>Analyst</u>	SRT

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	153	mg/L	0.11	C
Iron, Total	7439-89-6	ND	mg/L	0.067	C,ND
Magnesium, Total	7439-95-4	27.3	mg/L	0.11	C
Manganese, Total	7439-96-5	0.20	mg/L	0.0056	C



Client Sample ID	FFMP04AW	Collected	11/03/2021 11:56 AM
Lab Sample ID	3210346002	Lab Receipt	11/03/2021 4:37 PM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	2.7	mg/L	0.56	C
Sodium, Total	7440-23-5	90.1	mg/L	0.56	C

Wet Chemistry (General)
S2540C-11

Prep

Method	N/A	Container	3210346002-B(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	786452	Dilution	1
Date	11/09/2021 2:12 PM	Analyst	AKH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	982	mg/L	25	C

Wet Chemistry (General)
EPA 300.0

Prep

Method	N/A	Container	3210346002-B(Unpreserved)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	EPA 300.0	Fraction	
Batch	785244	Dilution	2
Date	11/04/2021 5:06 PM	Analyst	GJB

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	322	mg/L	2.0	C,0
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	0.42	mg/L	0.20	C
Sulfate	SO4	49.6	mg/L	2.0	C

Wet Chemistry (General)
EPA 410.4

Prep

Method	N/A	Container	3210346002-A(Sulfuric Acid)
Batch	N/A	Aliquot	2 mL
Date	N/A	Tech.	N/A

Analysis

Method	EPA 410.4	Fraction	
Batch	786530	Dilution	1
Date	11/12/2021 8:40 AM	Analyst	ALK

RESULTS

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



Client Sample ID	FFMP04AW	Collected	11/03/2021 11:56 AM
Lab Sample ID	3210346002	Lab Receipt	11/03/2021 4:37 PM

Wet Chemistry (General) SW846 9050A

Prep				Analysis			
Method	N/A	Container	3210346002-B(Unpreserved)	Method	SW846 9050A	Fraction	
Batch	N/A	Aliquot	50 mL	Batch	786946	Dilution	2
Date	N/A	Tech.	N/A	Date	11/10/2021 3:25 PM	Analyst	MBS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	1730	umhos/cm	2	C

Wet Chemistry (General) SW846 9060A

Prep				Analysis			
Method	N/A	Container	3210346002-D(Hydrochloric Acid)	Method	SW846 9060A	Fraction	
Batch	N/A	Aliquot	6 mL	Batch	786940	Dilution	1
Date	N/A	Tech.	N/A	Date	11/10/2021 10:58 PM	Analyst	PAG

RESULTS

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

Wet Chemistry (General) SW846 9066

Prep				Analysis			
Method	420.4/9066	Container	3210346002-F(Sulfuric Acid)	Method	SW846 9066	Fraction	
Batch	786775	Aliquot	100 mL	Batch	787302	Dilution	1
Date	11/10/2021 4:12 PM	Tech.	MXF	Date	11/12/2021 12:41 PM	Analyst	MXF

RESULTS

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

Wet Chemistry (General) ASTM D6919-09

Prep				Analysis			
Method	N/A	Container	3210346002-A(Sulfuric Acid)	Method	ASTM D6919-09	Fraction	
Batch	N/A	Aliquot	5 mL	Batch	788366	Dilution	10
Date	N/A	Tech.	N/A	Date	11/18/2021 3:20 PM	Analyst	ALK



Client Sample ID	FFMP04AW	Collected	11/03/2021 11:56 AM
Lab Sample ID	3210346002	Lab Receipt	11/03/2021 4:37 PM

RESULTS

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

Wet Chemistry (General) SM2130B-2011

Prep

Method	N/A	Container	3210346002-B(Unpreserved)
Batch	N/A	Aliquot	25 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2130B-2011	Fraction	
Batch	788086	Dilution	1
Date	11/15/2021 3:01 PM	Analyst	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	0.32	NTU	0.10	C,3

Wet Chemistry (General) SM2320B-2011

Prep

Method	N/A	Container	3210346002-B(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	787208	Dilution	1
Date	11/12/2021 1:22 PM	Analyst	JXM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	172	mg/L	5	C

Wet Chemistry (General) SM2320B-2011

Prep

Method	N/A	Container	3210346002-I(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	787208	Dilution	1
Date	11/12/2021 1:22 PM	Analyst	JXM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	172	mg/L	5	C,1

Wet Chemistry (General) S4500HB-11



Project 4TH QTR 2021 GWMP-FORM 19Q
Workorder 3210346

Client Sample ID	FFMP04AW	Collected	11/03/2021 11:56 AM
Lab Sample ID	3210346002	Lab Receipt	11/03/2021 4:37 PM

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346002-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	S4500HB-11	<u>Fraction</u>	
<u>Batch</u>	787208	<u>Dilution</u>	1
<u>Date</u>	11/12/2021 1:22 PM	<u>Analyst</u>	JXM

RESULTS

<u>Compound</u>	<u>CAS No</u>	<u>Result</u> <u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
pH	PH	8.20 pH_Units		C,2

FLD Field

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346002-C(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	Field	<u>Fraction</u>	
<u>Batch</u>	789066	<u>Dilution</u>	1
<u>Date</u>	11/03/2021 11:56 AM	<u>Analyst</u>	BGS

RESULTS

<u>Compound</u>	<u>CAS No</u>	<u>Result</u> <u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
Depth to Water Level	DWL	35.71 Feet		C
Dissolved Oxygen	DO	0.26 mg/L	0.01	C
Elev Top MW Casing above MSL	781	560.72 Feet		C
Flow Rate	FRATE	1.90 gal/min		C
Ground Water Elevation	GWE	525.01 ft/MSL		C
Oxidation-Reduction Potential	ORP	283 mV		C
pH, Field (SM4500B)	PHF	7.04 pH_Units		C
Sample Depth	SD	146.00 Feet		C
Specific Conductance, Field	CONDf	2101 umhos/cm	1	C
Temperature	Temp	13.26 Deg. C		C
Total Well Depth	TWD	148.50 Feet		C
Turbidity, Field	TURBF	ND NTU	1	C,ND
Volume in Water Column	VWC	165.80 Gallons		C
Water Level After Purge	LAP	78.71 Feet		C
Well Volumes Purged	WVP	0.69 Vol		C



Client Sample ID	FFMP036W	Collected	11/03/2021 1:25 PM
Lab Sample ID	3210346003	Lab Receipt	11/03/2021 4:37 PM

Volatiles - GC/MS SW846 8260B

Prep

Method	N/A	Container	3210346003-G(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260B	Fraction	VOA_Trace
Batch	784779	Dilution	1
Date	11/05/2021 2:23 AM	Analyst	PDK

RESULTS

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

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	92.50 %	62 - 133	
4-Bromofluorobenzene	460-00-4	110 %	79 - 114	
Dibromofluoromethane	1868-53-7	85.80 %	78 - 116	
Toluene-d8	2037-26-5	89.40 %	76 - 127	

Metals Analytical SW846 6010C

Prep

Method	SW846 3015	Container	3210346003-J(Nitric Acid)
Batch	786303	Aliquot	45 mL
Date	11/08/2021 6:02 PM	Tech.	JSE

Analysis

Method	SW846 6010C	Fraction	ICP_AES
Batch	786449	Dilution	1
Date	11/11/2021 2:26 PM	Analyst	SRT

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	35.2	mg/L	0.11	C
Iron, Total	7439-89-6	3.2	mg/L	0.067	C
Magnesium, Total	7439-95-4	4.1	mg/L	0.11	C
Manganese, Total	7439-96-5	0.12	mg/L	0.0056	C



Client Sample ID	FFMP036W	Collected	11/03/2021 1:25 PM
Lab Sample ID	3210346003	Lab Receipt	11/03/2021 4:37 PM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	1.8	mg/L	0.56	C
Sodium, Total	7440-23-5	14.4	mg/L	0.56	C

Wet Chemistry (General)
S2540C-11

Prep

Method	N/A	Container	3210346003-B(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	786452	Dilution	1
Date	11/09/2021 2:12 PM	Analyst	AKH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	156	mg/L	25	C

Wet Chemistry (General)
EPA 300.0

Prep

Method	N/A	Container	3210346003-B(Unpreserved)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	EPA 300.0	Fraction	
Batch	785244	Dilution	2
Date	11/04/2021 5:33 PM	Analyst	GJB

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	31.6	mg/L	2.0	C
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	ND	mg/L	0.20	C,ND
Sulfate	SO4	21.4	mg/L	2.0	C

Wet Chemistry (General)
EPA 410.4

Prep

Method	N/A	Container	3210346003-A(Sulfuric Acid)
Batch	N/A	Aliquot	2 mL
Date	N/A	Tech.	N/A

Analysis

Method	EPA 410.4	Fraction	
Batch	786593	Dilution	1
Date	11/12/2021 9:05 AM	Analyst	ALK

RESULTS

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



Client Sample ID	FFMP036W	Collected	11/03/2021 1:25 PM
Lab Sample ID	3210346003	Lab Receipt	11/03/2021 4:37 PM

Wet Chemistry (General) SW846 9050A

Prep

Method	N/A	Container	3210346003-B(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 9050A	Fraction	
Batch	786946	Dilution	1
Date	11/10/2021 3:25 PM	Analyst	MBS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	344	umhos/cm	1	C

Wet Chemistry (General) SW846 9060A

Prep

Method	N/A	Container	3210346003-D(Hydrochloric Acid)
Batch	N/A	Aliquot	6 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 9060A	Fraction	
Batch	786940	Dilution	1
Date	11/10/2021 10:58 PM	Analyst	PAG

RESULTS

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

Wet Chemistry (General) SW846 9066

Prep

Method	420.4/9066	Container	3210346003-F(Sulfuric Acid)
Batch	786775	Aliquot	100 mL
Date	11/10/2021 4:12 PM	Tech.	MXF

Analysis

Method	SW846 9066	Fraction	
Batch	787302	Dilution	1
Date	11/12/2021 12:41 PM	Analyst	MXF

RESULTS

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

Wet Chemistry (General) ASTM D6919-09

Prep

Method	N/A	Container	3210346003-A(Sulfuric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	ASTM D6919-09	Fraction	
Batch	788368	Dilution	10
Date	11/18/2021 2:33 AM	Analyst	ALK



Client Sample ID	FFMP036W	Collected	11/03/2021 1:25 PM
Lab Sample ID	3210346003	Lab Receipt	11/03/2021 4:37 PM

RESULTS

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

Wet Chemistry (General) SM2130B-2011

Prep

Method	N/A	Container	3210346003-B(Unpreserved)
Batch	N/A	Aliquot	25 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2130B-2011	Fraction	
Batch	788086	Dilution	1
Date	11/15/2021 3:01 PM	Analyst	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	39.1	NTU	0.10	C,3

Wet Chemistry (General) SM2320B-2011

Prep

Method	N/A	Container	3210346003-B(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	787208	Dilution	1
Date	11/12/2021 1:22 PM	Analyst	JXM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	70	mg/L	5	C

Wet Chemistry (General) SM2320B-2011

Prep

Method	N/A	Container	3210346003-I(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	787208	Dilution	1
Date	11/12/2021 1:22 PM	Analyst	JXM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	70	mg/L	5	C,1

Wet Chemistry (General) S4500HB-11



Project 4TH QTR 2021 GWMP-FORM 19Q
Workorder 3210346

Client Sample ID	FFMP036W	Collected	11/03/2021 1:25 PM
Lab Sample ID	3210346003	Lab Receipt	11/03/2021 4:37 PM

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346003-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	S4500HB-11	<u>Fraction</u>	
<u>Batch</u>	787208	<u>Dilution</u>	1
<u>Date</u>	11/12/2021 1:22 PM	<u>Analyst</u>	JXM

RESULTS

<u>Compound</u>	<u>CAS No</u>	<u>Result</u> <u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
pH	PH	8.12 pH_Units		C,2

FLD Field

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346003-C(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	Field	<u>Fraction</u>	
<u>Batch</u>	789066	<u>Dilution</u>	1
<u>Date</u>	11/03/2021 1:25 PM	<u>Analyst</u>	BGS

RESULTS

<u>Compound</u>	<u>CAS No</u>	<u>Result</u> <u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
Depth to Water Level	DWL	35.60 Feet		C
Dissolved Oxygen	DO	ND mg/L	0.01	C,ND
Elev Top MW Casing above MSL	781	478.23 Feet		C
Flow Rate	FRATE	1.26 gal/min		C
Ground Water Elevation	GWE	442.63 ft/MSL		C
Oxidation-Reduction Potential	ORP	-247 mV		C
pH, Field (SM4500B)	PHF	8.12 pH_Units		C
Sample Depth	SD	135.00 Feet		C
Specific Conductance, Field	CONDf	400 umhos/cm	1	C
Temperature	Temp	13.06 Deg. C		C
Total Well Depth	TWD	142.60 Feet		C
Turbidity, Field	TURBF	130 NTU	1	C
Volume in Water Column	VWC	157.29 Gallons		C
Water Level After Purge	LAP	74.11 Feet		C
Well Volumes Purged	WVP	0.56 Vol		C



Client Sample ID	FFMP035W	Collected	11/03/2021 2:30 PM
Lab Sample ID	3210346004	Lab Receipt	11/03/2021 4:37 PM

Volatiles - GC/MS SW846 8260B

Prep				Analysis			
<u>Method</u>	N/A	<u>Container</u>	3210346004-G(Hydrochloric Acid)	<u>Method</u>	SW846 8260B	<u>Fraction</u>	VOA_Trace
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL	<u>Batch</u>	784779	<u>Dilution</u>	1
<u>Date</u>	N/A	<u>Tech.</u>	N/A	<u>Date</u>	11/05/2021 2:46 AM	<u>Analyst</u>	PDK

RESULTS

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

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.70 %	62 - 133	
4-Bromofluorobenzene	460-00-4	112 %	79 - 114	
Dibromofluoromethane	1868-53-7	87.10 %	78 - 116	
Toluene-d8	2037-26-5	92.10 %	76 - 127	

Metals Analytical SW846 6010C

Prep				Analysis			
<u>Method</u>	SW846 3015	<u>Container</u>	3210346004-J(Nitric Acid)	<u>Method</u>	SW846 6010C	<u>Fraction</u>	ICP_AES
<u>Batch</u>	786303	<u>Aliquot</u>	45 mL	<u>Batch</u>	786449	<u>Dilution</u>	1
<u>Date</u>	11/08/2021 6:02 PM	<u>Tech.</u>	JSE	<u>Date</u>	11/11/2021 2:30 PM	<u>Analyst</u>	SRT

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	118	mg/L	0.11	C
Iron, Total	7439-89-6	0.075	mg/L	0.067	C
Magnesium, Total	7439-95-4	29.0	mg/L	0.11	C
Manganese, Total	7439-96-5	0.39	mg/L	0.0056	C



Client Sample ID	FFMP035W	Collected	11/03/2021 2:30 PM
Lab Sample ID	3210346004	Lab Receipt	11/03/2021 4:37 PM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	6.8	mg/L	0.56	C
Sodium, Total	7440-23-5	92.4	mg/L	0.56	C

Wet Chemistry (General) S2540C-11

Prep

Method	N/A	Container	3210346004-B(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	786452	Dilution	1
Date	11/09/2021 2:12 PM	Analyst	AKH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	882	mg/L	25	C

Wet Chemistry (General) EPA 300.0

Prep

Method	N/A	Container	3210346004-B(Unpreserved)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	EPA 300.0	Fraction	
Batch	785242	Dilution	2
Date	11/04/2021 6:31 PM	Analyst	GJB

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	294	mg/L	2.0	C,0
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	4.6	mg/L	0.20	C
Sulfate	SO4	52.4	mg/L	2.0	C

Wet Chemistry (General) EPA 410.4

Prep

Method	N/A	Container	3210346004-A(Sulfuric Acid)
Batch	N/A	Aliquot	2 mL
Date	N/A	Tech.	N/A

Analysis

Method	EPA 410.4	Fraction	
Batch	786530	Dilution	1
Date	11/12/2021 8:40 AM	Analyst	ALK

RESULTS

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



Client Sample ID	FFMP035W	Collected	11/03/2021 2:30 PM
Lab Sample ID	3210346004	Lab Receipt	11/03/2021 4:37 PM

Wet Chemistry (General) SW846 9050A

Prep				Analysis			
<u>Method</u>	N/A	<u>Container</u>	3210346004-B(Unpreserved)	<u>Method</u>	SW846 9050A	<u>Fraction</u>	
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL	<u>Batch</u>	786946	<u>Dilution</u>	2
<u>Date</u>	N/A	<u>Tech.</u>	N/A	<u>Date</u>	11/10/2021 3:25 PM	<u>Analyst</u>	MBS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	1550	umhos/cm	2	c

Wet Chemistry (General) SW846 9060A

Prep				Analysis			
<u>Method</u>	N/A	<u>Container</u>	3210346004-D(Hydrochloric Acid)	<u>Method</u>	SW846 9060A	<u>Fraction</u>	
<u>Batch</u>	N/A	<u>Aliquot</u>	6 mL	<u>Batch</u>	786940	<u>Dilution</u>	1
<u>Date</u>	N/A	<u>Tech.</u>	N/A	<u>Date</u>	11/10/2021 10:58 PM	<u>Analyst</u>	PAG

RESULTS

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

Wet Chemistry (General) SW846 9066

Prep				Analysis			
<u>Method</u>	420.4/9066	<u>Container</u>	3210346004-F(Sulfuric Acid)	<u>Method</u>	SW846 9066	<u>Fraction</u>	
<u>Batch</u>	786775	<u>Aliquot</u>	100 mL	<u>Batch</u>	787302	<u>Dilution</u>	1
<u>Date</u>	11/10/2021 4:12 PM	<u>Tech.</u>	MXF	<u>Date</u>	11/12/2021 12:41 PM	<u>Analyst</u>	MXF

RESULTS

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

Wet Chemistry (General) ASTM D6919-09

Prep				Analysis			
<u>Method</u>	N/A	<u>Container</u>	3210346004-A(Sulfuric Acid)	<u>Method</u>	ASTM D6919-09	<u>Fraction</u>	
<u>Batch</u>	N/A	<u>Aliquot</u>	5 mL	<u>Batch</u>	788693	<u>Dilution</u>	10
<u>Date</u>	N/A	<u>Tech.</u>	N/A	<u>Date</u>	11/20/2021 7:08 AM	<u>Analyst</u>	ALK



Client Sample ID	FFMP035W	Collected	11/03/2021 2:30 PM
Lab Sample ID	3210346004	Lab Receipt	11/03/2021 4:37 PM

RESULTS

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

Wet Chemistry (General) SM2130B-2011

Prep

Method	N/A	Container	3210346004-B(Unpreserved)
Batch	N/A	Aliquot	25 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2130B-2011	Fraction	
Batch	788086	Dilution	1
Date	11/15/2021 3:01 PM	Analyst	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	1.22	NTU	0.10	C,3

Wet Chemistry (General) SM2320B-2011

Prep

Method	N/A	Container	3210346004-B(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	787208	Dilution	1
Date	11/12/2021 1:22 PM	Analyst	JXM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	100	mg/L	5	C

Wet Chemistry (General) SM2320B-2011

Prep

Method	N/A	Container	3210346004-I(Unpreserved)
Batch	N/A	Aliquot	50 mL
Date	N/A	Tech.	N/A

Analysis

Method	SM2320B-2011	Fraction	
Batch	787208	Dilution	1
Date	11/12/2021 1:22 PM	Analyst	JXM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	100	mg/L	5	C,1

Wet Chemistry (General) S4500HB-11



Project 4TH QTR 2021 GWMP-FORM 19Q
Workorder 3210346

Client Sample ID	FFMP035W	Collected	11/03/2021 2:30 PM
Lab Sample ID	3210346004	Lab Receipt	11/03/2021 4:37 PM

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346004-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	S4500HB-11	<u>Fraction</u>	
<u>Batch</u>	787208	<u>Dilution</u>	1
<u>Date</u>	11/12/2021 1:22 PM	<u>Analyst</u>	JXM

RESULTS

<u>Compound</u>	<u>CAS No</u>	<u>Result</u> <u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
pH	PH	8.02 pH_Units		C,2

FLD Field

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346004-C(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	Field	<u>Fraction</u>	
<u>Batch</u>	789066	<u>Dilution</u>	1
<u>Date</u>	11/03/2021 2:30 PM	<u>Analyst</u>	BGS

RESULTS

<u>Compound</u>	<u>CAS No</u>	<u>Result</u> <u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
Depth to Water Level	DWL	42.59 Feet		C
Dissolved Oxygen	DO	0.15 mg/L	0.01	C
Elev Top MW Casing above MSL	781	477.56 Feet		C
Flow Rate	FRATE	0.52 gal/min		C
Ground Water Elevation	GWE	434.97 ft/MSL		C
Oxidation-Reduction Potential	ORP	91 mV		C
pH, Field (SM4500B)	PHF	6.40 pH_Units		C
Sample Depth	SD	65.00 Feet		C
Specific Conductance, Field	CONDf	1884 umhos/cm	1	C
Temperature	Temp	14.09 Deg. C		C
Total Well Depth	TWD	71.80 Feet		C
Turbidity, Field	TURBF	ND NTU	1	C,ND
Volume in Water Column	VWC	42.94 Gallons		C
Water Level After Purge	LAP	50.61 Feet		C
Well Volumes Purged	WVP	0.60 Vol		C



Client Sample ID	FFMP029W	Collected	11/03/2021 3:27 PM
Lab Sample ID	3210346005	Lab Receipt	11/03/2021 4:37 PM

Volatiles - GC/MS SW846 8260B

Prep

Method	N/A	Container	3210346005-G(Hydrochloric Acid)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	SW846 8260B	Fraction	VOA_Trace
Batch	784779	Dilution	1
Date	11/05/2021 3:08 AM	Analyst	PDK

RESULTS

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

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	95 %	62 - 133	
4-Bromofluorobenzene	460-00-4	110 %	79 - 114	
Dibromofluoromethane	1868-53-7	87.60 %	78 - 116	
Toluene-d8	2037-26-5	89.40 %	76 - 127	

Metals Analytical SW846 6010C

Prep

Method	SW846 3015	Container	3210346005-J(Nitric Acid)
Batch	786303	Aliquot	45 mL
Date	11/08/2021 6:02 PM	Tech.	JSE

Analysis

Method	SW846 6010C	Fraction	ICP_AES
Batch	786449	Dilution	1
Date	11/11/2021 2:33 PM	Analyst	SRT

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Calcium, Total	7440-70-2	15.9	mg/L	0.11	C
Iron, Total	7439-89-6	ND	mg/L	0.067	C,ND
Magnesium, Total	7439-95-4	11.3	mg/L	0.11	C
Manganese, Total	7439-96-5	0.035	mg/L	0.0056	C



Client Sample ID	FFMP029W	Collected	11/03/2021 3:27 PM
Lab Sample ID	3210346005	Lab Receipt	11/03/2021 4:37 PM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Potassium, Total	7440-09-7	2.4	mg/L	0.56	C
Sodium, Total	7440-23-5	25.7	mg/L	0.56	C

Wet Chemistry (General) S2540C-11

Prep

Method	N/A	Container	3210346005-B(Unpreserved)
Batch	N/A	Aliquot	
Date	N/A	Tech.	N/A

Analysis

Method	S2540C-11	Fraction	
Batch	786452	Dilution	1
Date	11/09/2021 2:12 PM	Analyst	AKH

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Total Dissolved Solids	TDS	220	mg/L	25	C

Wet Chemistry (General) EPA 300.0

Prep

Method	N/A	Container	3210346005-B(Unpreserved)
Batch	N/A	Aliquot	5 mL
Date	N/A	Tech.	N/A

Analysis

Method	EPA 300.0	Fraction	
Batch	785242	Dilution	2
Date	11/04/2021 5:50 PM	Analyst	GJB

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Chloride	Cl	64.6	mg/L	2.0	C
Fluoride	F	ND	mg/L	0.20	C,ND
Nitrate-N	NO3	3.8	mg/L	0.20	C
Sulfate	SO4	13.4	mg/L	2.0	C

Wet Chemistry (General) EPA 410.4

Prep

Method	N/A	Container	3210346005-A(Sulfuric Acid)
Batch	N/A	Aliquot	2 mL
Date	N/A	Tech.	N/A

Analysis

Method	EPA 410.4	Fraction	
Batch	786530	Dilution	1
Date	11/12/2021 8:40 AM	Analyst	ALK

RESULTS

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



Client Sample ID	FFMP029W	Collected	11/03/2021 3:27 PM
Lab Sample ID	3210346005	Lab Receipt	11/03/2021 4:37 PM

Wet Chemistry (General) SW846 9050A

Prep				Analysis			
Method	N/A	Container	3210346005-B(Unpreserved)	Method	SW846 9050A	Fraction	
Batch	N/A	Aliquot	50 mL	Batch	786946	Dilution	1
Date	N/A	Tech.	N/A	Date	11/10/2021 3:25 PM	Analyst	MBS

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Specific Conductance	Cond	375	umhos/cm	1	C

Wet Chemistry (General) SW846 9060A

Prep				Analysis			
Method	N/A	Container	3210346005-D(Hydrochloric Acid)	Method	SW846 9060A	Fraction	
Batch	N/A	Aliquot	6 mL	Batch	786940	Dilution	1
Date	N/A	Tech.	N/A	Date	11/10/2021 10:58 PM	Analyst	PAG

RESULTS

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

Wet Chemistry (General) SW846 9066

Prep				Analysis			
Method	420.4/9066	Container	3210346005-F(Sulfuric Acid)	Method	SW846 9066	Fraction	
Batch	786775	Aliquot	100 mL	Batch	787302	Dilution	1
Date	11/10/2021 4:12 PM	Tech.	MXF	Date	11/12/2021 12:41 PM	Analyst	MXF

RESULTS

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

Wet Chemistry (General) ASTM D6919-09

Prep				Analysis			
Method	N/A	Container	3210346005-A(Sulfuric Acid)	Method	ASTM D6919-09	Fraction	
Batch	N/A	Aliquot	5 mL	Batch	788366	Dilution	10
Date	N/A	Tech.	N/A	Date	11/18/2021 3:08 PM	Analyst	ALK



Project 4TH QTR 2021 GWMP-FORM 19Q
Workorder 3210346

Client Sample ID	FFMP029W	Collected	11/03/2021 3:27 PM
Lab Sample ID	3210346005	Lab Receipt	11/03/2021 4:37 PM

RESULTS

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

Wet Chemistry (General) SM2130B-2011

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346005-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	25 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	SM2130B-2011	<u>Fraction</u>	1
<u>Batch</u>	788086	<u>Dilution</u>	1
<u>Date</u>	11/15/2021 3:01 PM	<u>Analyst</u>	BXD

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Turbidity	Turb	0.38	NTU	0.10	C,3

Wet Chemistry (General) SM2320B-2011

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346005-B(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	SM2320B-2011	<u>Fraction</u>	1
<u>Batch</u>	787208	<u>Dilution</u>	1
<u>Date</u>	11/12/2021 1:22 PM	<u>Analyst</u>	JXM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Bicarbonate	HCO3	15	mg/L	5	C

Wet Chemistry (General) SM2320B-2011

Prep

<u>Method</u>	N/A	<u>Container</u>	3210346005-I(Unpreserved)
<u>Batch</u>	N/A	<u>Aliquot</u>	50 mL
<u>Date</u>	N/A	<u>Tech.</u>	N/A

Analysis

<u>Method</u>	SM2320B-2011	<u>Fraction</u>	1
<u>Batch</u>	787208	<u>Dilution</u>	1
<u>Date</u>	11/12/2021 1:22 PM	<u>Analyst</u>	JXM

RESULTS

Compound	CAS No	Result	Units	RDL	Qualifiers
Alkalinity, Total	ALKT	15	mg/L	5	C,1

Wet Chemistry (General) S4500HB-11



Project 4TH QTR 2021 GWMP-FORM 19Q
 Workorder 3210346

Client Sample ID	FFMP029W	Collected	11/03/2021 3:27 PM
Lab Sample ID	3210346005	Lab Receipt	11/03/2021 4:37 PM

Prep

<u>Method</u> N/A	<u>Container</u> 3210346005-B(Unpreserved)
<u>Batch</u> N/A	<u>Aliquot</u> 50 mL
<u>Date</u> N/A	<u>Tech.</u> N/A

Analysis

<u>Method</u> S4500HB-11	<u>Fraction</u>
<u>Batch</u> 787208	<u>Dilution</u> 1
<u>Date</u> 11/12/2021 1:22 PM	<u>Analyst</u> JXM

RESULTS

<u>Compound</u>	<u>CAS No</u>	<u>Result</u> <u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
pH	PH	6.94 pH_Units		C,2

FLD Field

Prep

<u>Method</u> N/A	<u>Container</u> 3210346005-C(Unpreserved)
<u>Batch</u> N/A	<u>Aliquot</u>
<u>Date</u> N/A	<u>Tech.</u> N/A

Analysis

<u>Method</u> Field	<u>Fraction</u>
<u>Batch</u> 789066	<u>Dilution</u> 1
<u>Date</u> 11/03/2021 3:47 PM	<u>Analyst</u> BGS

RESULTS

<u>Compound</u>	<u>CAS No</u>	<u>Result</u> <u>Units</u>	<u>RDL</u>	<u>Qualifiers</u>
Depth to Water Level	DWL	38.02 Feet		C
Dissolved Oxygen	DO	5.83 mg/L	0.01	C
Elev Top MW Casing above MSL	781	477.30 Feet		C
Flow Rate	FRATE	2.01 gal/min		C
Ground Water Elevation	GWE	439.28 ft/MSL		C
Oxidation-Reduction Potential	ORP	299 mV		C
pH, Field (SM4500B)	PHF	4.85 pH_Units		C
Sample Depth	SD	55.00 Feet		C
Specific Conductance, Field	CONDf	436 umhos/cm	1	C
Temperature	Temp	14.54 Deg. C		C
Total Well Depth	TWD	60.50 Feet		C
Turbidity, Field	TURBF	ND NTU	1	C,ND
Volume in Water Column	VWC	33.05 Gallons		C
Water Level After Purge	LAP	43.91 Feet		C
Well Volumes Purged	WVP	2.44 Vol		C



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3210346001	FFMP30RW	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	
3210346002	FFMP04AW	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	
3210346003	FFMP036W	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	
3210346004	FFMP035W	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
3210346005	FFMP029W	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	

	301 Fulling Mill Road Middletown, PA 17057 P: (717) 944-5541 F: (717) 944-1430
3210346	
Condition of Sample Receipt Form	
Client: _____ Worcester County Solid Waste Authority	
Initials: <u>DM</u> Date: <u>2/24/22</u>	

1.	Were airbills / tracking numbers present and recorded?	YES	NONE	Tracking number: _____	2.	Are Custody Seals on shipping containers intact?	YES	NONE
3.	Are Custody Seals on sample containers intact?	YES	NONE		4.	Is there a COC (Chain-of-Custody) present?	YES	NONE
5.	Are the COC and bottle labels complete, legible and in agreement?	YES	NONE		5a.	Does the COC contain sample locations?	YES	NONE
5b.	Does the COC contain date and time of sample collection for all samples?	YES	NONE		5c.	Does the COC contain sample collectors name?	YES	NONE
5d.	Does the COC note the type(s) of preservation for all bottles?	YES	NONE		5e.	Does the COC note the number of bottles submitted for each sample?	YES	NONE
5f.	Does the COC note the type of sample, composite or grab?	YES	NONE		5g.	Does the COC note the matrix of the sample(s)?	YES	NONE
6.	Are all aqueous samples requiring preservation preserved correctly?	YES	N/A		7.	Were all samples placed in the proper containers for the requested analyses, with sufficient volume?	YES	NONE
8.	Are all samples within holding times for the requested analyses?	YES	NONE		9.	Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)	YES	NONE
10.	Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?	YES	N/A		11.	Were the samples received on ice?	YES	NONE
12.	Were sample temperatures measured at 0.0-6.0°C	YES	NONE		13.	Are the samples DW matrix? If YES, fill out Reportable Drinking Water questions below	YES	NONE
13a.	Are the samples required for SDWA compliance reporting?	YES	N/A		13b.	Did the client provide a SDWA PWS ID#?	YES	NONE
13c.	Are all aqueous unpreserved SDWA samples pH 5-9?	YES	N/A		13d.	Did the client provide the SDWA sample location ID/Description?	YES	NONE
13e.	Did the client provide the SDWA sample type (D, E, R, C, P, S)?	YES	N/A					

Cooler #:	_____	Thermometer ID:	_____	Radiological (µCi):	_____
	_____		_____		_____
	_____		_____		_____
	_____		_____		_____
	_____		_____		_____
	_____		_____		_____
	_____		_____		_____

COMMENTS (Required for all NO responses above and any sample non-conformance):

Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis