1299 HARRISBURG PIKE | PO BOX 4425 | LANCASTER, PA 17604
PHONE: 717-397-9968 | FAX: 717-397-9973
www.lcswma.org

July 22, 2019

Mr. Timothy Long PG; Licensed Professional Geologist
Pennsylvania Department of Environmental Protection
Bureau of Waste Management
909 Elmerton Avenue
Harrisburg, PA 17110-8200

REF: 2nd Quarter 2019 Form 19, 50 and 52 Submittal
Frey Farm Landfill; BWM Permit #101389

Dear Mr. Long:

In accordance with the Municipal Waste Management Regulations, the Lancaster County Solid Waste Management Authority (LCSWMA) continues the above-referenced monitoring program.

Groundwater:
In accordance with the Municipal Waste Management Regulations, the Lancaster County Solid Waste Management Authority (LCSWMA) continues the above-referenced monitoring program. Attached are the Forms 19, lab reports, and excel csv file for your LandLinks Access database. I have attached per your request:

- USEPA MCL's exceedance report; Samples 2W, 2SW, 3A, 28, & 33W exceeded the primary standard for nitrate, samples are consistent with historic data the cause is attributed to agricultural impacts. No other MCL's were exceeded.

- USEPA SMCL's exceedance report; Samples 2W, 2DW, 3AW, 4AW, 5W, 17W, 18W, 26RW, 30RW, 31W, 32W, 33W exceeded the secondary standard for manganese, Samples 2SW, 17W, 31W, 32W & 33W exceeded the secondary standard for iron, Samples 2SW, 4AW, 5W, 17W & 26RW exceeded the secondary standard for total dissolved solids, and Samples 2DW, 4AW, & 17W exceeded the secondary standard for chlorides all samples are consistent with historic levels and exceedances are attributed to soil parent material, geologic conditions and historic land use. ARM reviews the site historic Chloride issues annually and has assessed the causes. No other SMCL's were exceeded.

- A copy of the field sampling data sheets for all locations.

Other than mentioned above ground water monitoring concentrations where consistent with historic data no significant deviations were observed.

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Leachate:

In accordance with both the Pennsylvania Municipal Waste Management and the Federal Subtitle D Regulations, the Lancaster County Solid Waste Management Authority (LCSWMA) continues to complete the above referenced monitoring program. Enclosed is the Department's Form 50 - "Municipal Waste Landfill Leachate Analysis" for the quarterly monitoring period.

- LCSWMA continues to monitor the Form 50 parameters from location FFLEINFS. This location is the lowest down-gradient point in the leachate collection system for the Frey Farm Landfill and represents "raw" leachate characteristics for the facility, as collected from the six (6) landfill cells.

- As indicated on the Form 50, the primary leachate collection and secondary detection systems encompass approximately 93 acres of drainage area.

- At your request, we have included analyses of the six (6) secondary individual detection zone discharges with an individual Form 50 for each.

- Included on the CD are files which contains the FFLEINFS data in a compatible format for your LandLinks software. The CD also contains a pdf file of the laboratory results and the Form 50.

In accordance with Section 273.255(d)(1)(2) and (3) of the Municipal Waste Management Regulations, the Lancaster County Solid Waste Management Authority (LCSWMA) is providing this secondary flow report.

The 2nd Quarter Frey Farm Landfill (FFLF) secondary flow was noted at 1.95 gallons per day per acre (gpdpa); which is below the regulatory limit of 100 gpdpa. The 2nd Quarter secondary flow was 0.91% of the primary flow, which is below the regulatory 10% (maximum). Table 1 indicates this quarter's weekly flow information for the six (6) operational cells at the FFLF, cells 2 and 4 continue to indicate no secondary flow present.

- Consistent with all previous monitoring events, LCSWMA remains well below the secondary leachate flow threshold (100-gpdpa)

LCSWMA

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Contiguous Landowners:
Attached are the Forms 52, lab reports, and excel csv file for your Landlinks Access database. MCL and SMCL exceedances are as follows:

- USEPA MCL's exceedance report; samples (3044RIVERRD, 3052RIVERRD, 3056 RIVERRD, 3060RIVERRD, 3076RIVERRD, and 3106RIVERRD) exceeded the limit for nitrate, samples are consistent with historic data the cause is attributed to agricultural impacts. No other MCL's were exceeded.

- USEPA SMCL's exceedance report; sample 3088RIVERRD exceeded the limit for chloride; samples 3088RIVERRD and 3125RIVERRD exceeded the limit for total dissolved solids and samples 3056RIVERRD, 3060RIVERRD, 3076RIVERRD, 3079RIVERRD and 3106RIVERRD exceeded the limit for manganese which is consistent with historic data and are attributed to natural soil and geologic conditions.

Ground water monitoring concentrations where consistent with historic data, no significant deviations where observed.

Please do not hesitate in contacting me if you have any questions or concerns at nrogers@lcswma.org.

Respectfully submitted,

Nick Rogers
FFLF Facility Manager

Enclosures

Cc: Michelle Marsh, John Ridinger, Dan Brown, Jeff Musser, Jordan Gallagher
Ed Rawski, Randy Weiss (PADEP)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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 — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X 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: 38.33 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.00 ft — Elevation of Water Level: 442.37 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 164.74 gal

Total Well Depth: 150.5 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/20/2019 — Sample Collection Time: 9:56

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3034898001 — Final Lab Analysis CompletionDate: 6/28/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP017W
Sample Date	5/20/2019

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	SM20-4500D
BICARBONATE ALKALINITY	53	SM20-2320B
CALCIUM, TOTAL	84.4	SW846 6010B
CALCIUM, DISSOLVED	63	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	318	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	310	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	35.9	SW846 6010B
MAGNESIUM, DISSOLVED	32	SW846 6010B
MANGANESE, TOTAL (ug/l)	530	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	450	SW846 6010B
NITRATE-NITROGEN	1.8	EPA 300
pH-FIELD (SU)	5.97	FIELD
pH-LAB (SU)	6.43	SM20-4500B
POTASSIUM, TOTAL	5.5	SW846 6010B
POTASSIUM, DISSOLVED	4.5	SW846 6010B
SODIUM, TOTAL	71.9	SW846 6010B
SODIUM, DISSOLVED	65.6	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1275	FIELD
SPEC. COND., LAB (umhos/cm)	1140	EPA 120.1
SULFATE	54.2	EPA 300
ALKALINITY	53	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	729	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2.2	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	12.5	SM20- 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	5/20/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP017W
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	150	SW846 6010B
BARIUM, DISSOLVED	150	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.5	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.4	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	17	SW846 6010B
ZINC, DISSOLVED	9.3	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP017W
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP017W
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	7.9	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP017W
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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 (Do MM' SS.S")

Monitoring Point Number: FFMP018W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point: Latitude: 39 o 57 ' 11.62 " — Longitude: 76 o 27 ' 5.68 "

Depth to Water Level: 24.53 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.46 ft — Elevation of Water Level: 447.67 ft./MSL

Sampling Depth: 40 ft — Volume of Water Column: 17.56 gal

Total Well Depth: 51.43 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.1

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/20/2019 — Sample Collection Time: 10:26

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3034898002 — Final Lab Analysis CompletionDate: 6/28/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP018W
Sample Date	5/20/2019

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	SM20-4500D
BICARBONATE ALKALINITY	24	SM20-2320B
CALCIUM, TOTAL	36.5	SW846 6010B
CALCIUM, DISSOLVED	27.9	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	104	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	56 ND	SW846 6010B
IRON, DISSOLVED (ug/l)	100 ND	SW846 6010B
MAGNESIUM, TOTAL	16.4	SW846 6010B
MAGNESIUM, DISSOLVED	13.7	SW846 6010B
MANGANESE, TOTAL (ug/l)	280	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	230	SW846 6010B
NITRATE-NITROGEN	5.3	EPA 300
pH-FIELD (SU)	5.42	FIELD
pH-LAB (SU)	6.31	SM20-4500B
POTASSIUM, TOTAL	7.3	SW846 6010B
POTASSIUM, DISSOLVED	5.4	SW846 6010B
SODIUM, TOTAL	35.5	SW846 6010B
SODIUM, DISSOLVED	30.7	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	540	FIELD
SPEC. COND., LAB (umhos/cm)	509	EPA 120.1
SULFATE	44.8	EPA 300
ALKALINITY	24	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	323	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.1 ND	SM20- 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	5/20/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP018W
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	5.4 ND	SW846 6010B
BARIUM, TOTAL	68	SW846 6010B
BARIUM, DISSOLVED	65	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	2 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	4 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	10 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	4 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	10 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	4 ND	SW846 6010B
ZINC, TOTAL	10	SW846 6010B
ZINC, DISSOLVED	12	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP018W
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP018W
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	9.9	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP018W
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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: 26.1 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.79 ft — Elevation of Water Level: 445.85 ft./MSL

Sampling Depth: 49 ft — Volume of Water Column: 69.64 gal

Total Well Depth: 132.79 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/20/2019 — Sample Collection Time: 11:12

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3034898003 — Final Lab Analysis CompletionDate: 6/28/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP019W
Sample Date	5/20/2019

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	SM20-4500D
BICARBONATE ALKALINITY	60	SM20-2320B
CALCIUM, TOTAL	51.2	SW846 6010B
CALCIUM, DISSOLVED	44.1	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	79.4	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	56 ND	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	7.4	SW846 6010B
MAGNESIUM, DISSOLVED	5	SW846 6010B
MANGANESE, TOTAL (ug/l)	5.6 ND	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	5.6 ND	SW846 6010B
NITRATE-NITROGEN	0.34	EPA 300
pH-FIELD (SU)	6.27	FIELD
pH-LAB (SU)	7.17	SM20-4500B
POTASSIUM, TOTAL	1.2	SW846 6010B
POTASSIUM, DISSOLVED	0.74	SW846 6010B
SODIUM, TOTAL	12.7	SW846 6010B
SODIUM, DISSOLVED	8.9	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	440	FIELD
SPEC. COND., LAB (umhos/cm)	398	EPA 120.1
SULFATE	20	EPA 300
ALKALINITY	60	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	246	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.2	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.1 ND	SM20- 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	5/20/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP019W
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	70	SW846 6010B
BARIUM, DISSOLVED	73	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	5.6 ND	SW846 6010B
ZINC, DISSOLVED	5.6 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP019W
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP019W
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP019W
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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 (Do MM' SS.S")

Monitoring Point Number: FFMP029W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point: Latitude: 39 o 57 ' 12.93 " — Longitude: 76 o 27 ' 0.67 "

Depth to Water Level: 35.45 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.00 ft — Elevation of Water Level: 441.85 ft./MSL

Sampling Depth: 55 ft — Volume of Water Column: 33.85 gal

Total Well Depth: 58.5 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 2.6

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/20/2019 — Sample Collection Time: 12:05

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3034898004 — Final Lab Analysis CompletionDate: 6/28/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP029W
Sample Date	5/20/2019

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	SM20-4500D
BICARBONATE ALKALINITY	8	SM20-2320B
CALCIUM, TOTAL	3.6	SW846 6010B
CALCIUM, DISSOLVED	2.9	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	20.8	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	58	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	4	SW846 6010B
MAGNESIUM, DISSOLVED	3.5	SW846 6010B
MANGANESE, TOTAL (ug/l)	16	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	13	SW846 6010B
NITRATE-NITROGEN	3.7	EPA 300
pH-FIELD (SU)	4.88	FIELD
pH-LAB (SU)	6.18	SM20-4500B
POTASSIUM, TOTAL	1.2	SW846 6010B
POTASSIUM, DISSOLVED	1	SW846 6010B
SODIUM, TOTAL	8.6	SW846 6010B
SODIUM, DISSOLVED	7.8	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	116	FIELD
SPEC. COND., LAB (umhos/cm)	95	EPA 120.1
SULFATE	2 ND	EPA 300
ALKALINITY	8	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	116	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	2.27	SM20- 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	5/20/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP029W
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	33	SW846 6010B
BARIUM, DISSOLVED	32	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	5.6 ND	SW846 6010B
ZINC, DISSOLVED	5.6 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP029W
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP029W
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP029W
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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

___ 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: 56.26 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.70 ft — Elevation of Water Level: 481.14 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 137.67 gal

Total Well Depth: 150 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.3

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/20/2019 — Sample Collection Time: 13:19

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3034898005 — Final Lab Analysis CompletionDate: 6/28/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No 101389

Monitoring Point No. FFMP005W

Sample Date 5/20/2019

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	0.177	SM20-4500D
BICARBONATE ALKALINITY	42	SM20-2320B
CALCIUM, TOTAL	78.6	SW846 6010B
CALCIUM, DISSOLVED	64.6	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	244	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	56 ND	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	26	SW846 6010B
MAGNESIUM, DISSOLVED	20.9	SW846 6010B
MANGANESE, TOTAL (ug/l)	120	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	93	SW846 6010B
NITRATE-NITROGEN	2.7	EPA 300
pH-FIELD (SU)	5.64	FIELD
pH-LAB (SU)	6.32	SM20-4500B
POTASSIUM, TOTAL	4.4	SW846 6010B
POTASSIUM, DISSOLVED	3.1	SW846 6010B
SODIUM, TOTAL	68.8	SW846 6010B
SODIUM, DISSOLVED	55.2	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1052	FIELD
SPEC. COND., LAB (umhos/cm)	975	EPA 120.1
SULFATE	76.2	EPA 300
ALKALINITY	42	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	597	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.8	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.2	SM20- 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	5/20/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP005W
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	54	SW846 6010B
BARIUM, DISSOLVED	56	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	9.3	SW846 6010B
ZINC, DISSOLVED	6.9	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP005W
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP005W
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP005W
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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 — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X 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: 66.9 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 3.30 ft — Elevation of Water Level: 480.50 ft./MSL

Sampling Depth: 105 ft — Volume of Water Column: 69.17 gal

Total Well Depth: 114 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)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/20/2019 — Sample Collection Time: 14:18

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3034898006 — Final Lab Analysis CompletionDate: 6/28/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP26RW
Sample Date	5/20/2019

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	SM20-4500D
BICARBONATE ALKALINITY	47	SM20-2320B
CALCIUM, TOTAL	66.5	SW846 6010B
CALCIUM, DISSOLVED	55.1	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	187	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	56 ND	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	20	SW846 6010B
MAGNESIUM, DISSOLVED	14.6	SW846 6010B
MANGANESE, TOTAL (ug/l)	770	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	640	SW846 6010B
NITRATE-NITROGEN	1.5	EPA 300
pH-FIELD (SU)	5.5	FIELD
pH-LAB (SU)	6.15	SM20-4500B
POTASSIUM, TOTAL	12.9	SW846 6010B
POTASSIUM, DISSOLVED	8.7	SW846 6010B
SODIUM, TOTAL	70.9	SW846 6010B
SODIUM, DISSOLVED	53.5	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	911	FIELD
SPEC. COND., LAB (umhos/cm)	843	EPA 120.1
SULFATE	94.4	EPA 300
ALKALINITY	47	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	550	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.56	SM20- 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	5/20/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP26RW
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	93	SW846 6010B
BARIUM, DISSOLVED	95	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	14	SW846 6010B
ZINC, DISSOLVED	11	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP26RW
Sample Date	5/20/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP26RW
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	27	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP26RW
Sample Date	5/20/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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: FFMP028W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point: Latitude: 37 ° 57 ' 21.62 " — Longitude: 76 ° 27 ' 0.1 "

Depth to Water Level: 6.17 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.50 ft — Elevation of Water Level: 458.83 ft./MSL

Sampling Depth: 50 ft — Volume of Water Column: ___ gal

Total Well Depth: 60 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)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/22/2019 — Sample Collection Time: 11:02

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035363001 — Final Lab Analysis CompletionDate: 5/31/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No 101389

Monitoring Point No. FFMP028W

Sample Date 5/22/2019

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	SM20-4500D
BICARBONATE ALKALINITY	33	SM20-2320B
CALCIUM, TOTAL	30.8	SW846 6010B
CALCIUM, DISSOLVED	29.5	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	90	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	56 ND	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	18	SW846 6010B
MAGNESIUM, DISSOLVED	16	SW846 6010B
MANGANESE, TOTAL (ug/l)	18	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	40	SW846 6010B
NITRATE-NITROGEN	17.5	EPA 300
pH-FIELD (SU)	5.48	FIELD
pH-LAB (SU)	6.52	SM20-4500B
POTASSIUM, TOTAL	2.1	SW846 6010B
POTASSIUM, DISSOLVED	1.8	SW846 6010B
SODIUM, TOTAL	27	SW846 6010B
SODIUM, DISSOLVED	24.2	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	556	FIELD
SPEC. COND., LAB (umhos/cm)	518	EPA 120.1
SULFATE	25	EPA 300
ALKALINITY	33	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	333	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.3	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.17	SM20- 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.	FFMP028W
Sample Date	5/22/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP028W
Sample Date	5/22/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	66	SW846 6010B
BARIUM, DISSOLVED	67	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	11	SW846 6010B
ZINC, DISSOLVED	12	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP028W
Sample Date	5/22/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP028W
Sample Date	5/22/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP028W
Sample Date	5/22/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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: FFMP025W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 19.07 " — Longitude: 76 ° 27 ' 1.12 "

Depth to Water Level: 24.56 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.50 ft — Elevation of Water Level: 452.24 ft./MSL

Sampling Depth: 39 ft — Volume of Water Column: 22.68 gal

Total Well Depth: 40 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.1

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/22/2019 — Sample Collection Time: 11:35

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035363002 — Final Lab Analysis CompletionDate: 5/31/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP025W
Sample Date	5/22/2019

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	SM20-4500D
BICARBONATE ALKALINITY	33	SM20-2320B
CALCIUM, TOTAL	17.3	SW846 6010B
CALCIUM, DISSOLVED	17.3	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	59.7	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	56 ND	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	11.9	SW846 6010B
MAGNESIUM, DISSOLVED	12	SW846 6010B
MANGANESE, TOTAL (ug/l)	14	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	6.2	SW846 6010B
NITRATE-NITROGEN	8.6	EPA 300
pH-FIELD (SU)	4.87	FIELD
pH-LAB (SU)	6.62	SM20-4500B
POTASSIUM, TOTAL	1.8	SW846 6010B
POTASSIUM, DISSOLVED	1.8	SW846 6010B
SODIUM, TOTAL	18.2	SW846 6010B
SODIUM, DISSOLVED	18.4	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	362	FIELD
SPEC. COND., LAB (umhos/cm)	320	EPA 120.1
SULFATE	27.3	EPA 300
ALKALINITY	33	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	230	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.11	SM20- 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.	FFMP025W
Sample Date	5/22/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP025W
Sample Date	5/22/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	47	SW846 6010B
BARIUM, DISSOLVED	45	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	7.2	SW846 6010B
ZINC, DISSOLVED	5.9	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP025W
Sample Date	5/22/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP025W
Sample Date	5/22/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP025W
Sample Date	5/22/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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 (Do MM' SS.S")

Monitoring Point Number: FFMP02DW — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 o 57 ' 27.74 " — Longitude: 76 o 27 ' 1.49 "

Depth to Water Level: 18.24 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: ___ ft — Elevation of Water Level: 491.36 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: 0.5

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/22/2019 — Sample Collection Time: 12:50

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035363003 — Final Lab Analysis CompletionDate: 5/31/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP02DW
Sample Date	5/22/2019

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	SM20-4500D
BICARBONATE ALKALINITY	129	SM20-2320B
CALCIUM, TOTAL	93.5	SW846 6010B
CALCIUM, DISSOLVED	91.9	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	296	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	150	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	18.6	SW846 6010B
MAGNESIUM, DISSOLVED	18.8	SW846 6010B
MANGANESE, TOTAL (ug/l)	390	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	380	SW846 6010B
NITRATE-NITROGEN	4.1	EPA 300
pH-FIELD (SU)	7.08	FIELD
pH-LAB (SU)	7.87	SM20-4500B
POTASSIUM, TOTAL	1.7	SW846 6010B
POTASSIUM, DISSOLVED	2	SW846 6010B
SODIUM, TOTAL	91.9	SW846 6010B
SODIUM, DISSOLVED	92.5	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1353	FIELD
SPEC. COND., LAB (umhos/cm)	1280	EPA 120.1
SULFATE	36.9	EPA 300
ALKALINITY	129	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	369	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.95	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	1.82	SM20- 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	5/22/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP02DW
Sample Date	5/22/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	160	SW846 6010B
BARIUM, DISSOLVED	170	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	5.6 ND	SW846 6010B
ZINC, DISSOLVED	5.6 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP02DW
Sample Date	5/22/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP02DW
Sample Date	5/22/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP02DW
Sample Date	5/22/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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 — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X 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: 14.35 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: ___ ft — Elevation of Water Level: 495.55 ft./MSL

Sampling Depth: 18 ft — Volume of Water Column: ___ gal

Total Well Depth: 25 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.1

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/22/2019 — Sample Collection Time: 13:08

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035363004 — Final Lab Analysis CompletionDate: 5/31/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP02SW
Sample Date	5/22/2019

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	0.235	SM20-4500D
BICARBONATE ALKALINITY	13	SM20-2320B
CALCIUM, TOTAL	14.9	SW846 6010B
CALCIUM, DISSOLVED	15.4	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	68.4	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	2500	SW846 6010B
IRON, DISSOLVED (ug/l)	120	SW846 6010B
MAGNESIUM, TOTAL	6.7	SW846 6010B
MAGNESIUM, DISSOLVED	6.9	SW846 6010B
MANGANESE, TOTAL (ug/l)	26	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	17	SW846 6010B
NITRATE-NITROGEN	16	EPA 300
pH-FIELD (SU)	6.05	FIELD
pH-LAB (SU)	6.53	SM20-4500B
POTASSIUM, TOTAL	4.5	SW846 6010B
POTASSIUM, DISSOLVED	4.1	SW846 6010B
SODIUM, TOTAL	28.6	SW846 6010B
SODIUM, DISSOLVED	41	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	265	FIELD
SPEC. COND., LAB (umhos/cm)	496	EPA 120.1
SULFATE	24	EPA 300
ALKALINITY	13	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	878	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	5.8	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	45.4	SM20- 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	5/22/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP02SW
Sample Date	5/22/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	71	SW846 6010B
BARIUM, DISSOLVED	72	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	85	SW846 6010B
CHROMIUM, DISSOLVED	6.2	SW846 6010B
COPPER, TOTAL	9.4	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	10	SW846 6010B
ZINC, DISSOLVED	14	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP02SW
Sample Date	5/22/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP02SW
Sample Date	5/22/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	52	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP02SW
Sample Date	5/22/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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 — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X 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: 52.91 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.90 ft — Elevation of Water Level: 523.49 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 140.98 gal

Total Well Depth: 148.9 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/22/2019 — Sample Collection Time: 14:26

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035363005 — Final Lab Analysis CompletionDate: 5/31/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP015W
Sample Date	5/22/2019

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	SM20-4500D
BICARBONATE ALKALINITY	15	SM20-2320B
CALCIUM, TOTAL	6.9	SW846 6010B
CALCIUM, DISSOLVED	6.6	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	8.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	100 ND	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	8.9	SW846 6010B
MAGNESIUM, DISSOLVED	8.6	SW846 6010B
MANGANESE, TOTAL (ug/l)	36	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	32	SW846 6010B
NITRATE-NITROGEN	6.4	EPA 300
pH-FIELD (SU)	4.97	FIELD
pH-LAB (SU)	6.4	SM20-4500B
POTASSIUM, TOTAL	1.7	SW846 6010B
POTASSIUM, DISSOLVED	1.6	SW846 6010B
SODIUM, TOTAL	18.8	SW846 6010B
SODIUM, DISSOLVED	18.4	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	255	FIELD
SPEC. COND., LAB (umhos/cm)	213	EPA 120.1
SULFATE	41.9	EPA 300
ALKALINITY	15	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	233	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.18	SM20- 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	5/22/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP015W
Sample Date	5/22/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	5.9 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	47	SW846 6010B
BARIUM, DISSOLVED	45	SW846 6010B
CADMIUM, TOTAL	2 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	4 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	10 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	4 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	2.5 ND	SW846 7470A
MERCURY, DISSOLVED	2.5 ND	SW846 7470A
SELENIUM, TOTAL	10 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	4 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	20	SW846 6010B
ZINC, DISSOLVED	16	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP015W
Sample Date	5/22/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP015W
Sample Date	5/22/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	4 ND	SW846 6010B
BERYLLIUM	2 ND	SW846 6010B
COBALT	10 ND	SW846 6010B
NICKEL	10 ND	SW846 6010B
THALLIUM	2 ND	SW846 6010B
VANADIUM	4 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP015W
Sample Date	5/22/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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: 14.41 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 0.49 ft — Elevation of Water Level: 502.11 ft./MSL

Sampling Depth: 79 ft — Volume of Water Column: 119.83 gal

Total Well Depth: 96 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/23/2019 — Sample Collection Time: 9:53

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035732001 — Final Lab Analysis CompletionDate: 7/1/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No 101389

Monitoring Point No. FFMP033W

Sample Date 5/23/2019

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	2.15	SM20-4500D
BICARBONATE ALKALINITY	49	SM20-2320B
CALCIUM, TOTAL	28	SW846 6010B
CALCIUM, DISSOLVED	27	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	44.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	8800	SW846 6010B
IRON, DISSOLVED (ug/l)	6000	SW846 6010B
MAGNESIUM, TOTAL	10.3	SW846 6010B
MAGNESIUM, DISSOLVED	8.7	SW846 6010B
MANGANESE, TOTAL (ug/l)	630	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	650	SW846 6010B
NITRATE-NITROGEN	10.8	EPA 300
pH-FIELD (SU)	5.91	FIELD
pH-LAB (SU)	6.82	SM20-4500B
POTASSIUM, TOTAL	1.7	SW846 6010B
POTASSIUM, DISSOLVED	1.5	SW846 6010B
SODIUM, TOTAL	15	SW846 6010B
SODIUM, DISSOLVED	13.5	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	363	FIELD
SPEC. COND., LAB (umhos/cm)	292	EPA 120.1
SULFATE	7.6	EPA 300
ALKALINITY	49	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	259	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.79	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	16.7	SM20- 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	5/23/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP033W
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	50	SW846 6010B
BARIUM, DISSOLVED	49	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	5.6 ND	SW846 6010B
ZINC, DISSOLVED	6.3	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP033W
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP033W
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP033W
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number
HEXAMETHYCYCLOTRISILOXANE	541-05-9

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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

X Upgradient/Upstream ___ Downgradient/Downstream

Location (County): Lancaster County — Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 31.2 " — Longitude: 76 ° 27 ' 23.53 "

Depth to Water Level: 60.13 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.38 ft — Elevation of Water Level: 552.53 ft./MSL

Sampling Depth: 130 ft — Volume of Water Column: 117.30 gal

Total Well Depth: 140 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/23/2019 — Sample Collection Time: 11:07

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035732002 — Final Lab Analysis CompletionDate: 7/8/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No 101389

Monitoring Point No. FFMP031W

Sample Date 5/23/2019

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	0.75	SM20-4500D
BICARBONATE ALKALINITY	69	SM20-2320B
CALCIUM, TOTAL	44.7	SW846 6010B
CALCIUM, DISSOLVED	39.4	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	26.7	EPA 300
FLUORIDE	0.22	EPA 300
IRON, TOTAL (ug/l)	4600	SW846 6010B
IRON, DISSOLVED (ug/l)	3900	SW846 6010B
MAGNESIUM, TOTAL	4.8	SW846 6010B
MAGNESIUM, DISSOLVED	4.2	SW846 6010B
MANGANESE, TOTAL (ug/l)	370	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	340	SW846 6010B
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	7.54	FIELD
pH-LAB (SU)	7.78	SM20-4500B
POTASSIUM, TOTAL	1.4	SW846 6010B
POTASSIUM, DISSOLVED	1.3	SW846 6010B
SODIUM, TOTAL	10.8	SW846 6010B
SODIUM, DISSOLVED	9.8	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	340	FIELD
SPEC. COND., LAB (umhos/cm)	269	EPA 120.1
SULFATE	49.4	EPA 300
ALKALINITY	69	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	211	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	17.3	SM20- 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	5/23/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP031W
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	30	SW846 6010B
BARIUM, DISSOLVED	26	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	5.6 ND	SW846 6010B
ZINC, DISSOLVED	5.6 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP031W
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP031W
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP031W
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number
SILANOL, TRIMETHYL-	1066-40-6
HEXAMETHYCYCLOTRISILOXANE	541-05-9

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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 — X Well ___ Spring ___ Stream ___ Other

X 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: 55.58 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.60 ft — Elevation of Water Level: 557.62 ft./MSL

Sampling Depth: 85 ft — Volume of Water Column: 167.46 gal

Total Well Depth: 169.6 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.1

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/23/2019 — Sample Collection Time: 11:51

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035732003 — Final Lab Analysis CompletionDate: 7/8/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP002W
Sample Date	5/23/2019

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	0.635	SM20-4500D
BICARBONATE ALKALINITY	5 ND	SM20-2320B
CALCIUM, TOTAL	21.6	SW846 6010B
CALCIUM, DISSOLVED	18.3	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	21.1	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	120	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	8.1	SW846 6010B
MAGNESIUM, DISSOLVED	7.4	SW846 6010B
MANGANESE, TOTAL (ug/l)	260	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	240	SW846 6010B
NITRATE-NITROGEN	22.3	EPA 300
pH-FIELD (SU)	4.88	FIELD
pH-LAB (SU)	5.62	SM20-4500B
POTASSIUM, TOTAL	0.95	SW846 6010B
POTASSIUM, DISSOLVED	0.95	SW846 6010B
SODIUM, TOTAL	14.4	SW846 6010B
SODIUM, DISSOLVED	13.7	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	298	FIELD
SPEC. COND., LAB (umhos/cm)	242	EPA 120.1
SULFATE	10.6	EPA 300
ALKALINITY	5 ND	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	199	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.61	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.22	SM20- 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	5/23/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP002W
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	74	SW846 6010B
BARIUM, DISSOLVED	66	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	11	SW846 6010B
COPPER, DISSOLVED	11	SW846 6010B
LEAD-FLAMELESS, TOTAL	3.1	SW846 6010B
LEAD, DISSOLVED	2.5	SW846 6010B
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	18	SW846 6010B
ZINC, DISSOLVED	18	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP002W
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP002W
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	9.6	SW846 6010B
NICKEL	13	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP002W
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number
SILANOL, TRIMETHYL-	1066-40-6
HEXAMETHYCYCLOTRISILOXANE	541-05-9

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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 — X Well ___ Spring ___ Stream ___ Other

X 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: 45.53 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.06 ft — Elevation of Water Level: 548.56 ft./MSL

Sampling Depth: 62 ft — Volume of Water Column: 43.28 gal

Total Well Depth: 75 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/23/2019 — Sample Collection Time: 12:31

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035732004 — Final Lab Analysis CompletionDate: 7/8/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP032W
Sample Date	5/23/2019

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	0.917	SM20-4500D
BICARBONATE ALKALINITY	66	SM20-2320B
CALCIUM, TOTAL	17.1	SW846 6010B
CALCIUM, DISSOLVED	14.9	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	20.7	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	10500	SW846 6010B
IRON, DISSOLVED (ug/l)	4200	SW846 6010B
MAGNESIUM, TOTAL	5.6	SW846 6010B
MAGNESIUM, DISSOLVED	5.2	SW846 6010B
MANGANESE, TOTAL (ug/l)	660	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	590	SW846 6010B
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.73	FIELD
pH-LAB (SU)	7.64	SM20-4500B
POTASSIUM, TOTAL	1.2	SW846 6010B
POTASSIUM, DISSOLVED	1.3	SW846 6010B
SODIUM, TOTAL	14	SW846 6010B
SODIUM, DISSOLVED	13.5	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	212	FIELD
SPEC. COND., LAB (umhos/cm)	166	EPA 120.1
SULFATE	2 ND	EPA 300
ALKALINITY	66	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	132	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	60.4	SM20- 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	5/23/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP032W
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	5.6 ND	SW846 6010B
BARIUM, DISSOLVED	5.6 ND	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	5.6 ND	SW846 6010B
ZINC, DISSOLVED	9.4	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP032W
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP032W
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP032W
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number
HEXAMETHYCYCLOTRISILOXANE	541-05-9

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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

___ 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: 47.24 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.20 ft — Elevation of Water Level: 543.66 ft./MSL

Sampling Depth: 130 ft — Volume of Water Column: 146.81 gal

Total Well Depth: 147.2 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)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/23/2019 — Sample Collection Time: 13:45

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035732005 — Final Lab Analysis CompletionDate: 7/8/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP03AW
Sample Date	5/23/2019

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	0.119	SM20-4500D
BICARBONATE ALKALINITY	16	SM20-2320B
CALCIUM, TOTAL	17.1	SW846 6010B
CALCIUM, DISSOLVED	14.1	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	24.5	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	56 ND	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	12.7	SW846 6010B
MAGNESIUM, DISSOLVED	10.4	SW846 6010B
MANGANESE, TOTAL (ug/l)	280	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	250	SW846 6010B
NITRATE-NITROGEN	17.7	EPA 300
pH-FIELD (SU)	4.93	FIELD
pH-LAB (SU)	6.03	SM20-4500B
POTASSIUM, TOTAL	1.3	SW846 6010B
POTASSIUM, DISSOLVED	1.2	SW846 6010B
SODIUM, TOTAL	12.2	SW846 6010B
SODIUM, DISSOLVED	10.5	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	278	FIELD
SPEC. COND., LAB (umhos/cm)	228	EPA 120.1
SULFATE	2.8	EPA 300
ALKALINITY	16	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	168	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.72	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.26	SM20- 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	5/23/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP03AW
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	43	SW846 6010B
BARIUM, DISSOLVED	37	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	6.6	SW846 6010B
COPPER, DISSOLVED	6.4	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	17	SW846 6010B
ZINC, DISSOLVED	18	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP03AW
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP03AW
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	9.1	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP03AW
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number
HEXAMETHYCYCLOTRISILOXANE	541-05-9

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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: FFMP016W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 19.15 " — Longitude: 76 ° 27 ' 0.88 "

Depth to Water Level: 16.11 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.97 ft — Elevation of Water Level: 458.49 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 196.34 gal

Total Well Depth: 149.8 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: ___

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/23/2019 — Sample Collection Time: 14:04

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035732006 — Final Lab Analysis CompletionDate: 7/8/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP016W
Sample Date	5/23/2019

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	SM20-4500D
BICARBONATE ALKALINITY	30	SM20-2320B
CALCIUM, TOTAL	35	SW846 6010B
CALCIUM, DISSOLVED	29.7	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	70.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	56 ND	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	17.1	SW846 6010B
MAGNESIUM, DISSOLVED	14.5	SW846 6010B
MANGANESE, TOTAL (ug/l)	11	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	11	SW846 6010B
NITRATE-NITROGEN	9.6	EPA 300
pH-FIELD (SU)	5.16	FIELD
pH-LAB (SU)	6.64	SM20-4500B
POTASSIUM, TOTAL	2.4	SW846 6010B
POTASSIUM, DISSOLVED	2.4	SW846 6010B
SODIUM, TOTAL	28.5	SW846 6010B
SODIUM, DISSOLVED	25.2	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	475	FIELD
SPEC. COND., LAB (umhos/cm)	431	EPA 120.1
SULFATE	31.5	EPA 300
ALKALINITY	30	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	297	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.3	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.13	SM20- 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.	FFMP016W
Sample Date	5/23/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP016W
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	62	SW846 6010B
BARIUM, DISSOLVED	56	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	8.6	SW846 6010B
ZINC, DISSOLVED	13	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP016W
Sample Date	5/23/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP016W
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	5.6 ND	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP016W
Sample Date	5/23/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number
HEXAMETHYCYCLOTRISILOXANE	541-05-9

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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

___ 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: 30.53 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.20 ft — Elevation of Water Level: 531.77 ft./MSL

Sampling Depth: 85 ft — Volume of Water Column: 87.34 gal

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)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/24/2019 — Sample Collection Time: 9:29

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035930001 — Final Lab Analysis CompletionDate: 7/8/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No	101389
Monitoring Point No.	FFMP30RW
Sample Date	5/24/2019

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	0.173	SM20-4500D
BICARBONATE ALKALINITY	21	SM20-2320B
CALCIUM, TOTAL	18.9	SW846 6010B
CALCIUM, DISSOLVED	17.3	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	116	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	100 ND	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	14.4	SW846 6010B
MAGNESIUM, DISSOLVED	15.2	SW846 6010B
MANGANESE, TOTAL (ug/l)	820	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	740	SW846 6010B
NITRATE-NITROGEN	5	EPA 300
pH-FIELD (SU)	5.19	FIELD
pH-LAB (SU)	6.09	SM20-4500B
POTASSIUM, TOTAL	2.3	SW846 6010B
POTASSIUM, DISSOLVED	2.7	SW846 6010B
SODIUM, TOTAL	48	SW846 6010B
SODIUM, DISSOLVED	60.2	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	516	FIELD
SPEC. COND., LAB (umhos/cm)	467	EPA 120.1
SULFATE	13.1	EPA 300
ALKALINITY	21	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	394	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.9	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.39	SM20- 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	5/24/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP30RW
Sample Date	5/24/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	5.9 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	69	SW846 6010B
BARIUM, DISSOLVED	63	SW846 6010B
CADMIUM, TOTAL	2 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	4 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	10 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	4 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	0.66	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	10 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	4 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	13	SW846 6010B
ZINC, DISSOLVED	10	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP30RW
Sample Date	5/24/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP30RW
Sample Date	5/24/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	4 ND	SW846 6010B
BERYLLIUM	2 ND	SW846 6010B
COBALT	10 ND	SW846 6010B
NICKEL	12	SW846 6010B
THALLIUM	2 ND	SW846 6010B
VANADIUM	4 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP30RW
Sample Date	5/24/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number
SILANOL, TRIMETHYL-	1066-40-6

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
07/15/2019
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

Facitlity 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 — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X 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: 31.28 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.52 ft — Elevation of Water Level: 529.44 ft./MSL

Sampling Depth: 146 ft — Volume of Water Column: 396.89 gal

Total Well Depth: 301.52 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)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 5/24/2019 — Sample Collection Time: 10:35

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3035930002 — Final Lab Analysis CompletionDate: 7/8/2019

Name/Affiliation of Person who Filled Out Form: Nick R. Rogers

Comments:

I.D. No 101389
Monitoring Point No. FFMP04AW
Sample Date 5/24/2019

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	0.141	SM20-4500D
BICARBONATE ALKALINITY	179	SM20-2320B
CALCIUM, TOTAL	153	SW846 6010B
CALCIUM, DISSOLVED	138	SW846 6010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	303	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	69	SW846 6010B
IRON, DISSOLVED (ug/l)	56 ND	SW846 6010B
MAGNESIUM, TOTAL	28.2	SW846 6010B
MAGNESIUM, DISSOLVED	25.1	SW846 6010B
MANGANESE, TOTAL (ug/l)	360	SW846 6010B
MANGANESE, DISSOLVED (ug/l)	350	SW846 6010B
NITRATE-NITROGEN	0.3	EPA 300
pH-FIELD (SU)	6.7	FIELD
pH-LAB (SU)	7.68	SM20-4500B
POTASSIUM, TOTAL	2.2	SW846 6010B
POTASSIUM, DISSOLVED	2.3	SW846 6010B
SODIUM, TOTAL	84.2	SW846 6010B
SODIUM, DISSOLVED	85.7	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1448	FIELD
SPEC. COND., LAB (umhos/cm)	1360	EPA 120.1
SULFATE	48.3	EPA 300
ALKALINITY	179	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	955	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.49	SM20- 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	5/24/2019

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.

I.D. No	101389
Monitoring Point No.	FFMP04AW
Sample Date	5/24/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	3.3 ND	SW846 6010B
ARSENIC, DISSOLVED	3 ND	SW846 6010B
BARIUM, TOTAL	200	SW846 6010B
BARIUM, DISSOLVED	180	SW846 6010B
CADMIUM, TOTAL	1.1 ND	SW846 6010B
CADMIUM, DISSOLVED	1.1 ND	SW846 6010B
CHROMIUM, TOTAL	2.2 ND	SW846 6010B
CHROMIUM, DISSOLVED	2.2 ND	SW846 6010B
COPPER, TOTAL	5.6 ND	SW846 6010B
COPPER, DISSOLVED	5.6 ND	SW846 6010B
LEAD-FLAMELESS, TOTAL	2.2 ND	SW846 6010B
LEAD, DISSOLVED	2.2 ND	SW846 6010B
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	5.6 ND	SW846 6010B
SELENIUM, DISSOLVED	5.6 ND	SW846 6010B
SILVER, TOTAL	2.2 ND	SW846 6010B
SILVER, DISSOLVED	2.2 ND	SW846 6010B
ZINC, TOTAL	7.5	SW846 6010B
ZINC, DISSOLVED	11	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP04AW
Sample Date	5/24/2019

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
CIS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
TRANS 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP04AW
Sample Date	5/24/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

SUBTITLE D - Detection Zone Add-On LIst - When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored annually in the groundwater monitoring wells.

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE (CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE	7 ND	SW846 8260B
TRANS 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY	2.2 ND	SW846 6010B
BERYLLIUM	1.1 ND	SW846 6010B
COBALT	5.6 ND	SW846 6010B
NICKEL	11	SW846 6010B
THALLIUM	1.1 ND	SW846 6010B
VANADIUM	2.2 ND	SW846 6010B

T Please indicate detection limit if analyte is not detected.

I.D. No	101389
Monitoring Point No.	FFMP04AW
Sample Date	5/24/2019

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number
SILANOL, TRIMETHYL-	1066-40-6

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

July 8, 2019

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:	**3035732**
Purchase Order:	**PO1000126**	Workorder ID:	**2ND QTR 2019 FFMP-FORM 19A**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Thursday, May 23, 2019.

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.

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

CC: Mr. Nicholas Rogers , 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.

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ALS Environmental

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SAMPLE SUMMARY

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3035732001	FFMP033W	Ground Water	5/23/2019 09:53	5/23/2019 15:21	Mr. Brian G Shade
3035732002	FFMP031W	Ground Water	5/23/2019 11:07	5/23/2019 15:21	Mr. Brian G Shade
3035732003	FFMP002W	Ground Water	5/23/2019 11:51	5/23/2019 15:21	Mr. Brian G Shade
3035732004	FFMP032W	Ground Water	5/23/2019 12:31	5/23/2019 15:21	Mr. Brian G Shade
3035732005	FFMP03AW	Ground Water	5/23/2019 13:45	5/23/2019 15:21	Mr. Brian G Shade
3035732006	FFMP016W	Ground Water	5/23/2019 14:04	5/23/2019 15:21	Mr. Brian G Shade
3035732007	FIELD BLANK	Water	5/23/2019 13:30	5/23/2019 15:21	Mr. Brian G Shade
3035732008	TRIP BLANK	Water	5/23/2019 15:21	5/23/2019 15:21	Mr. Brian G Shade

ALS Environmental

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SAMPLE SUMMARY

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

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 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.

Standard Acronyms/Flags

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

ALS Environmental

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732001** Date Collected: 5/23/2019 09:53 Matrix: Ground Water

Sample ID: **FFMP033W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/30/19 01:14	PDK	D
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/30/19 01:14	PDK	D
Benzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Bromoform	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/30/19 01:14	PDK	D
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Chloroform	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/30/19 01:14	PDK	D
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/30/19 01:14	PDK	D
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/30/19 01:14	PDK	D
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/30/19 01:14	PDK	D

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732001** Date Collected: 5/23/2019 09:53 Matrix: Ground Water
Sample ID: **FFMP033W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Styrene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Toluene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/30/19 01:14	PDK	D
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/30/19 01:14	PDK	D
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/30/19 01:14	PDK	D
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 01:14	PDK	D
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	116		%	62 - 133	SW846 8260B			5/30/19 01:14	PDK	D
4-Bromofluorobenzene (S)	108		%	79 - 114	SW846 8260B			5/30/19 01:14	PDK	D
Dibromofluoromethane (S)	106		%	78 - 116	SW846 8260B			5/30/19 01:14	PDK	D
Toluene-d8 (S)	83.1		%	76 - 127	SW846 8260B			5/30/19 01:14	PDK	D
Library Search - Volatiles										
Cyclotrisiloxane, hexamethy	7.7	J N	ug/L		SW846 8260B			5/30/19 01:14	PDK	D
WET CHEMISTRY										
Alkalinity, Bicarbonate	49		mg/L	5	SM2320B-2011			5/30/19 03:57	MLM	F
Alkalinity, Total	49	4	mg/L	5	SM2320B-2011			5/30/19 03:57	MLM	F
Ammonia-N	2.15		mg/L	0.100	D6919-09			5/30/19 11:59	AK	J
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/30/19 15:35	AK	J
Chloride	44.6		mg/L	2.0	EPA 300.0			5/24/19 18:19	CHW	F
Fluoride	ND		mg/L	0.20	EPA 300.0			5/24/19 18:19	CHW	F
Nitrate-N	10.8		mg/L	0.20	EPA 300.0			5/24/19 18:19	CHW	F
pH	6.82	1	pH_Units		S4500HB-11			5/30/19 03:57	MLM	F
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:29	C_D	5/30/19 05:54	C_D	C
Specific Conductance	292		umhos/cm	1	SM2510B-2011			5/30/19 03:57	MLM	F
Sulfate	7.6		mg/L	2.0	EPA 300.0			5/24/19 18:19	CHW	F
Total Dissolved Solids	259	2,3	mg/L	5	S2540C-11			5/30/19 12:00	EXS	F
Total Organic Carbon (TOC)	0.79		mg/L	0.50	SM5310B-2011			5/24/19 21:59	PAG	A
Turbidity	16.7		NTU	0.10	SM2130B-2011			5/24/19 08:53	R2B	F

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732001** Date Collected: 5/23/2019 09:53 Matrix: Ground Water

Sample ID: **FFMP033W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Arsenic, Dissolved	ND	5	mg/L	0.0030	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Barium, Total	0.050		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Barium, Dissolved	0.049		mg/L	0.0056	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Calcium, Total	28.0		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Calcium, Dissolved	27.0		mg/L	0.11	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Chromium, Dissolved	ND	6	mg/L	0.0022	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Iron, Total	8.8		mg/L	0.056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Iron, Dissolved	6.0	7	mg/L	0.056	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Magnesium, Total	10.3		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Magnesium, Dissolved	8.7		mg/L	0.11	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Manganese, Total	0.63		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Manganese, Dissolved	0.65		mg/L	0.0056	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	5/30/19 03:29	MSA	5/30/19 07:28	MSA	L
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	6/3/19 08:55	MSA	6/3/19 14:05	MSA	K
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Potassium, Total	1.7		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Potassium, Dissolved	1.5		mg/L	0.11	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Selenium, Dissolved	ND	8	mg/L	0.0056	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Sodium, Total	15.0		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Sodium, Dissolved	13.5		mg/L	0.11	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1
Zinc, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:01	MO	L1

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732001** Date Collected: 5/23/2019 09:53 Matrix: Ground Water

Sample ID: **FFMP033W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.0063		mg/L	0.0056	SW846 6020A	5/30/19 13:20	AHI	6/27/19 08:26	LXC	K1
FIELD PARAMETERS										
Depth to Water Level	14.41		Feet		Field			5/23/19 09:53	BGS	M
Elev Top MW Casing above MSL	516.52		Feet		Field			5/23/19 09:53	BGS	M
Flow Rate	1.76		gal/min		Field			5/23/19 09:53	BGS	M
Ground Water Elevation	502.11		ft/MSL		Field			5/23/19 09:53	BGS	M
pH, Field (SM4500B)	5.91		pH_Units		Field			5/23/19 09:53	BGS	M
Sample Depth	79.00		Feet		Field			5/23/19 09:53	BGS	M
Specific Conductance, Field	363		umhos/cm	1	Field			5/23/19 09:53	BGS	M
Temperature	12.19		Deg. C		Field			5/23/19 09:53	BGS	M
Total Well Depth	100.00		Feet		Field			5/23/19 09:53	BGS	M
Volume in Water Column	125.82		Gallons		Field			5/23/19 09:53	BGS	M
Water Level After Purge	20.31		Feet		Field			5/23/19 09:53	BGS	M
Well Volumes Purged	1.00		Vol		Field			5/23/19 09:53	BGS	M

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732002** Date Collected: 5/23/2019 11:07 Matrix: Ground Water

Sample ID: **FFMP031W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/30/19 01:37	PDK	D
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/30/19 01:37	PDK	D
Benzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Bromoform	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/30/19 01:37	PDK	D
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Chloroform	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/30/19 01:37	PDK	D
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/30/19 01:37	PDK	D
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/30/19 01:37	PDK	D
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/30/19 01:37	PDK	D

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732002** Date Collected: 5/23/2019 11:07 Matrix: Ground Water

Sample ID: **FFMP031W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Styrene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Toluene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/30/19 01:37	PDK	D
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/30/19 01:37	PDK	D
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/30/19 01:37	PDK	D
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 01:37	PDK	D
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	117		%	62 - 133	SW846 8260B			5/30/19 01:37	PDK	D
4-Bromofluorobenzene (S)	110		%	79 - 114	SW846 8260B			5/30/19 01:37	PDK	D
Dibromofluoromethane (S)	106		%	78 - 116	SW846 8260B			5/30/19 01:37	PDK	D
Toluene-d8 (S)	82.7		%	76 - 127	SW846 8260B			5/30/19 01:37	PDK	D
Library Search - Volatiles										
Silanol, trimethyl-	5.1	J N	ug/L		SW846 8260B			5/30/19 01:37	PDK	D
Cyclotrisiloxane, hexamethy	27.1	J N	ug/L		SW846 8260B			5/30/19 01:37	PDK	D
Unknown	5.2	J	ug/L		SW846 8260B			5/30/19 01:37	PDK	D
WET CHEMISTRY										
Alkalinity, Bicarbonate	69		mg/L	5	SM2320B-2011			5/30/19 04:07	MLM	F
Alkalinity, Total	69	3	mg/L	5	SM2320B-2011			5/30/19 04:07	MLM	F
Ammonia-N	0.750		mg/L	0.100	D6919-09			5/30/19 14:30	AK	J
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/28/19 11:36	AK	J
Chloride	26.7		mg/L	2.0	EPA 300.0			5/24/19 18:32	CHW	F
Fluoride	0.22		mg/L	0.20	EPA 300.0			5/24/19 18:32	CHW	F
Nitrate-N	ND		mg/L	0.20	EPA 300.0			5/24/19 18:32	CHW	F
pH	7.78	1	pH_Units		S4500HB-11			5/30/19 04:07	MLM	F
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:29	C_D	5/30/19 05:54	C_D	C
Specific Conductance	269		umhos/cm	1	SM2510B-2011			5/30/19 04:07	MLM	F
Sulfate	49.4		mg/L	2.0	EPA 300.0			5/24/19 18:32	CHW	F
Total Dissolved Solids	211	2	mg/L	5	S2540C-11			5/30/19 12:00	EXS	F

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732002** Date Collected: 5/23/2019 11:07 Matrix: Ground Water

Sample ID: **FFMP031W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Total Organic Carbon (TOC)	ND		mg/L	0.50	SM5310B-2011			5/24/19 21:59	PAG	A
Turbidity	17.3		NTU	0.10	SM2130B-2011			5/24/19 08:53	R2B	F
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Barium, Total	0.030		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Barium, Dissolved	0.026		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Calcium, Total	44.7		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Calcium, Dissolved	39.4		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Iron, Total	4.6		mg/L	0.056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Iron, Dissolved	3.9		mg/L	0.056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Magnesium, Total	4.8		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Magnesium, Dissolved	4.2		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Manganese, Total	0.37		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Manganese, Dissolved	0.34		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	5/30/19 03:29	MSA	5/30/19 07:29	MSA	L
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	6/3/19 08:55	MSA	6/3/19 14:09	MSA	K
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Potassium, Total	1.4		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Potassium, Dissolved	1.3		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Sodium, Total	10.8		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Sodium, Dissolved	9.8		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732002** Date Collected: 5/23/2019 11:07 Matrix: Ground Water

Sample ID: **FFMP031W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Zinc, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:04	MO	L1
Zinc, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:00	MO	K1
FIELD PARAMETERS										
Depth to Water Level	60.13		Feet		Field			5/23/19 11:07	BGS	M
Elev Top MW Casing above MSL	612.66		Feet		Field			5/23/19 11:07	BGS	M
Flow Rate	1.98		gal/min		Field			5/23/19 11:07	BGS	M
Ground Water Elevation	552.53		ft/MSL		Field			5/23/19 11:07	BGS	M
pH, Field (SM4500B)	7.54		pH_Units		Field			5/23/19 11:07	BGS	M
Sample Depth	130.00		Feet		Field			5/23/19 11:07	BGS	M
Specific Conductance, Field	340		umhos/cm	1	Field			5/23/19 11:07	BGS	M
Temperature	12.48		Deg. C		Field			5/23/19 11:07	BGS	M
Total Well Depth	142.70		Feet		Field			5/23/19 11:07	BGS	M
Volume in Water Column	121.38		Gallons		Field			5/23/19 11:07	BGS	M
Water Level After Purge	103.55		Feet		Field			5/23/19 11:07	BGS	M
Well Volumes Purged	1.00		Vol		Field			5/23/19 11:07	BGS	M

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732003** Date Collected: 5/23/2019 11:51 Matrix: Ground Water

Sample ID: **FFMP002W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/30/19 02:01	PDK	D
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/30/19 02:01	PDK	D
Benzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Bromoform	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/30/19 02:01	PDK	D
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Chloroform	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/30/19 02:01	PDK	D
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/30/19 02:01	PDK	D
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/30/19 02:01	PDK	D
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/30/19 02:01	PDK	D

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732003** Date Collected: 5/23/2019 11:51 Matrix: Ground Water
Sample ID: **FFMP002W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Styrene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Toluene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/30/19 02:01	PDK	D
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/30/19 02:01	PDK	D
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/30/19 02:01	PDK	D
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 02:01	PDK	D
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	119		%	62 - 133	SW846 8260B			5/30/19 02:01	PDK	D
4-Bromofluorobenzene (S)	105		%	79 - 114	SW846 8260B			5/30/19 02:01	PDK	D
Dibromofluoromethane (S)	108		%	78 - 116	SW846 8260B			5/30/19 02:01	PDK	D
Toluene-d8 (S)	82.6		%	76 - 127	SW846 8260B			5/30/19 02:01	PDK	D
Library Search - Volatiles										
Silanol, trimethyl-	3.6	J N	ug/L		SW846 8260B			5/30/19 02:01	PDK	D
Cyclotrisiloxane, hexamethy	17.2	J N	ug/L		SW846 8260B			5/30/19 02:01	PDK	D
Unknown	4.2	J	ug/L		SW846 8260B			5/30/19 02:01	PDK	D
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND		mg/L	5	SM2320B-2011			5/30/19 04:15	MLM	F
Alkalinity, Total	ND	3	mg/L	5	SM2320B-2011			5/30/19 04:15	MLM	F
Ammonia-N	0.635		mg/L	0.100	D6919-09			5/30/19 12:13	AK	J
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/28/19 11:36	AK	J
Chloride	21.1		mg/L	2.0	EPA 300.0			5/24/19 20:05	CHW	F
Fluoride	ND		mg/L	0.20	EPA 300.0			5/24/19 20:05	CHW	F
Nitrate-N	22.3	4	mg/L	0.50	EPA 300.0			5/25/19 18:16	CHW	F
pH	5.62	1	pH_Units		S4500HB-11			5/30/19 04:15	MLM	F
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:29	C_D	5/30/19 05:54	C_D	C
Specific Conductance	242		umhos/cm	1	SM2510B-2011			5/30/19 04:15	MLM	F
Sulfate	10.6		mg/L	2.0	EPA 300.0			5/24/19 20:05	CHW	F
Total Dissolved Solids	199	2	mg/L	5	S2540C-11			5/30/19 12:00	EXS	F

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732003** Date Collected: 5/23/2019 11:51 Matrix: Ground Water

Sample ID: **FFMP002W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Total Organic Carbon (TOC)	0.61		mg/L	0.50	SM5310B-2011			5/24/19 21:59	PAG	A
Turbidity	0.22		NTU	0.10	SM2130B-2011			5/24/19 08:53	R2B	F
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Barium, Total	0.074		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Barium, Dissolved	0.066		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Calcium, Total	21.6		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Calcium, Dissolved	18.3		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Cobalt, Total	0.0096		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Copper, Total	0.011		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Copper, Dissolved	0.011		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Iron, Total	0.12		mg/L	0.056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Lead, Total	0.0031		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Lead, Dissolved	0.0025		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Magnesium, Total	8.1		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Magnesium, Dissolved	7.4		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Manganese, Total	0.26		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Manganese, Dissolved	0.24		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	5/30/19 03:29	MSA	5/30/19 07:30	MSA	L
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	6/3/19 08:55	MSA	6/3/19 14:10	MSA	K
Nickel, Total	0.013		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Potassium, Total	0.95		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Potassium, Dissolved	0.95		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Sodium, Total	14.4		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Sodium, Dissolved	13.7		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732003** Date Collected: 5/23/2019 11:51 Matrix: Ground Water

Sample ID: **FFMP002W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Zinc, Total	0.018		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:07	MO	L1
Zinc, Dissolved	0.018		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:04	MO	K1
FIELD PARAMETERS										
Depth to Water Level	55.58		Feet		Field			5/23/19 11:51	BGS	M
Elev Top MW Casing above MSL	613.20		Feet		Field			5/23/19 11:51	BGS	M
Flow Rate	1.80		gal/min		Field			5/23/19 11:51	BGS	M
Ground Water Elevation	557.62		ft/MSL		Field			5/23/19 11:51	BGS	M
pH, Field (SM4500B)	4.88		pH_Units		Field			5/23/19 11:51	BGS	M
Sample Depth	85.00		Feet		Field			5/23/19 11:51	BGS	M
Specific Conductance, Field	298		umhos/cm	1	Field			5/23/19 11:51	BGS	M
Temperature	11.95		Deg. C		Field			5/23/19 11:51	BGS	M
Total Well Depth	90.02		Feet		Field			5/23/19 11:51	BGS	M
Volume in Water Column	50.63		Gallons		Field			5/23/19 11:51	BGS	M
Water Level After Purge	76.68		Feet		Field			5/23/19 11:51	BGS	M
Well Volumes Purged	1.07		Vol		Field			5/23/19 11:51	BGS	M

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732004** Date Collected: 5/23/2019 12:31 Matrix: Ground Water

Sample ID: **FFMP032W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/30/19 02:24	PDK	D
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/30/19 02:24	PDK	D
Benzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Bromoform	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/30/19 02:24	PDK	D
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Chloroform	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/30/19 02:24	PDK	D
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/30/19 02:24	PDK	D
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/30/19 02:24	PDK	D
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/30/19 02:24	PDK	D

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732004** Date Collected: 5/23/2019 12:31 Matrix: Ground Water

Sample ID: **FFMP032W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Styrene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Toluene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/30/19 02:24	PDK	D
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/30/19 02:24	PDK	D
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/30/19 02:24	PDK	D
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 02:24	PDK	D
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	117		%	62 - 133	SW846 8260B			5/30/19 02:24	PDK	D
4-Bromofluorobenzene (S)	105		%	79 - 114	SW846 8260B			5/30/19 02:24	PDK	D
Dibromofluoromethane (S)	109		%	78 - 116	SW846 8260B			5/30/19 02:24	PDK	D
Toluene-d8 (S)	81.8		%	76 - 127	SW846 8260B			5/30/19 02:24	PDK	D
Library Search - Volatiles										
Cyclotrisiloxane, hexamethy	11.5	J N	ug/L		SW846 8260B			5/30/19 02:24	PDK	D
WET CHEMISTRY										
Alkalinity, Bicarbonate	66		mg/L	5	SM2320B-2011			5/30/19 04:25	MLM	F
Alkalinity, Total	66	3	mg/L	5	SM2320B-2011			5/30/19 04:25	MLM	F
Ammonia-N	0.917		mg/L	0.100	D6919-09			5/30/19 13:07	AK	J
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/28/19 11:36	AK	J
Chloride	20.7		mg/L	2.0	EPA 300.0			5/24/19 20:20	CHW	F
Fluoride	ND		mg/L	0.20	EPA 300.0			5/24/19 20:20	CHW	F
Nitrate-N	ND		mg/L	0.20	EPA 300.0			5/24/19 20:20	CHW	F
pH	7.64	1	pH_Units		S4500HB-11			5/30/19 04:25	MLM	F
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:29	C_D	5/30/19 05:54	C_D	C
Specific Conductance	166		umhos/cm	1	SM2510B-2011			5/30/19 04:25	MLM	F
Sulfate	ND		mg/L	2.0	EPA 300.0			5/24/19 20:20	CHW	F
Total Dissolved Solids	132	2	mg/L	5	S2540C-11			5/30/19 12:00	EXS	F
Total Organic Carbon (TOC)	ND		mg/L	0.50	SM5310B-2011			5/25/19 02:12	PAG	A
Turbidity	60.4		NTU	0.10	SM2130B-2011			5/24/19 08:53	R2B	F

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732004** Date Collected: 5/23/2019 12:31 Matrix: Ground Water

Sample ID: **FFMP032W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Barium, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Barium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Calcium, Total	17.1		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Calcium, Dissolved	14.9		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Iron, Total	10.5		mg/L	0.056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Iron, Dissolved	4.2		mg/L	0.056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Magnesium, Total	5.6		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Magnesium, Dissolved	5.2		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Manganese, Total	0.66		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Manganese, Dissolved	0.59		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	5/30/19 03:29	MSA	5/30/19 07:31	MSA	L
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	6/3/19 08:55	MSA	6/3/19 14:11	MSA	K
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Potassium, Total	1.2		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Potassium, Dissolved	1.3		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Sodium, Total	14.0		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Sodium, Dissolved	13.5		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1
Zinc, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:10	MO	L1

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732004** Date Collected: 5/23/2019 12:31 Matrix: Ground Water

Sample ID: **FFMP032W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.0094		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:07	MO	K1
FIELD PARAMETERS										
Depth to Water Level	45.53		Feet		Field			5/23/19 12:31	BGS	M
Elev Top MW Casing above MSL	594.09		Feet		Field			5/23/19 12:31	BGS	M
Flow Rate	0.68		gal/min		Field			5/23/19 12:31	BGS	M
Ground Water Elevation	548.56		ft/MSL		Field			5/23/19 12:31	BGS	M
pH, Field (SM4500B)	6.73		pH_Units		Field			5/23/19 12:31	BGS	M
Sample Depth	62.00		Feet		Field			5/23/19 12:31	BGS	M
Specific Conductance, Field	212		umhos/cm	1	Field			5/23/19 12:31	BGS	M
Temperature	15.39		Deg. C		Field			5/23/19 12:31	BGS	M
Total Well Depth	77.60		Feet		Field			5/23/19 12:31	BGS	M
Volume in Water Column	47.14		Gallons		Field			5/23/19 12:31	BGS	M
Water Level After Purge	52.80		Feet		Field			5/23/19 12:31	BGS	M
Well Volumes Purged	1.00		Vol		Field			5/23/19 12:31	BGS	M

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732005** Date Collected: 5/23/2019 13:45 Matrix: Ground Water

Sample ID: **FFMP03AW** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/30/19 02:47	PDK	D
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/30/19 02:47	PDK	D
Benzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Bromoform	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/30/19 02:47	PDK	D
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Chloroform	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/30/19 02:47	PDK	D
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/30/19 02:47	PDK	D
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/30/19 02:47	PDK	D
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/30/19 02:47	PDK	D

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732005** Date Collected: 5/23/2019 13:45 Matrix: Ground Water

Sample ID: **FFMP03AW** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Styrene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Toluene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/30/19 02:47	PDK	D
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/30/19 02:47	PDK	D
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/30/19 02:47	PDK	D
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 02:47	PDK	D
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	118		%	62 - 133	SW846 8260B			5/30/19 02:47	PDK	D
4-Bromofluorobenzene (S)	105		%	79 - 114	SW846 8260B			5/30/19 02:47	PDK	D
Dibromofluoromethane (S)	105		%	78 - 116	SW846 8260B			5/30/19 02:47	PDK	D
Toluene-d8 (S)	82.1		%	76 - 127	SW846 8260B			5/30/19 02:47	PDK	D
Library Search - Volatiles										
Cyclotrisiloxane, hexamethy	12.4	J N	ug/L		SW846 8260B			5/30/19 02:47	PDK	D
Unknown	3.2	J	ug/L		SW846 8260B			5/30/19 02:47	PDK	D
WET CHEMISTRY										
Alkalinity, Bicarbonate	16		mg/L	5	SM2320B-2011			5/30/19 04:33	MLM	F
Alkalinity, Total	16	3	mg/L	5	SM2320B-2011			5/30/19 04:33	MLM	F
Ammonia-N	0.119		mg/L	0.100	D6919-09			5/30/19 13:35	AK	J
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/28/19 11:36	AK	J
Chloride	24.5		mg/L	2.0	EPA 300.0			5/24/19 20:35	CHW	F
Fluoride	ND		mg/L	0.20	EPA 300.0			5/24/19 20:35	CHW	F
Nitrate-N	17.7		mg/L	0.20	EPA 300.0			5/24/19 20:35	CHW	F
pH	6.03	1	pH_Units		S4500HB-11			5/30/19 04:33	MLM	F
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:29	C_D	5/30/19 05:54	C_D	C
Specific Conductance	228		umhos/cm	1	SM2510B-2011			5/30/19 04:33	MLM	F
Sulfate	2.8		mg/L	2.0	EPA 300.0			5/24/19 20:35	CHW	F
Total Dissolved Solids	168	2	mg/L	5	S2540C-11			5/30/19 12:00	EXS	F
Total Organic Carbon (TOC)	0.72		mg/L	0.50	SM5310B-2011			5/25/19 02:12	PAG	A

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732005** Date Collected: 5/23/2019 13:45 Matrix: Ground Water

Sample ID: **FFMP03AW** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	0.26		NTU	0.10	SM2130B-2011			5/24/19 08:53	R2B	F
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Barium, Total	0.043		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Barium, Dissolved	0.037		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Calcium, Total	17.1		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Calcium, Dissolved	14.1		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Copper, Total	0.0066		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Copper, Dissolved	0.0064		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Iron, Total	ND		mg/L	0.056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Magnesium, Total	12.7		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Magnesium, Dissolved	10.4		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Manganese, Total	0.28		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Manganese, Dissolved	0.25		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	5/30/19 03:29	MSA	5/30/19 07:35	MSA	L
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	6/3/19 08:55	MSA	6/3/19 14:15	MSA	K
Nickel, Total	0.0091		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Potassium, Total	1.3		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Potassium, Dissolved	1.2		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Sodium, Total	12.2		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Sodium, Dissolved	10.5		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732005** Date Collected: 5/23/2019 13:45 Matrix: Ground Water

Sample ID: **FFMP03AW** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Total	0.017		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:13	MO	L1
Zinc, Dissolved	0.018		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:10	MO	K1
FIELD PARAMETERS										
Depth to Water Level	47.24		Feet		Field			5/23/19 13:45	BGS	M
Elev Top MW Casing above MSL	590.90		Feet		Field			5/23/19 13:45	BGS	M
Flow Rate	2.11		gal/min		Field			5/23/19 13:45	BGS	M
Ground Water Elevation	543.66		ft/MSL		Field			5/23/19 13:45	BGS	M
pH, Field (SM4500B)	4.93		pH_Units		Field			5/23/19 13:45	BGS	M
Sample Depth	130.00		Feet		Field			5/23/19 13:45	BGS	M
Specific Conductance, Field	278		umhos/cm	1	Field			5/23/19 13:45	BGS	M
Temperature	11.42		Deg. C		Field			5/23/19 13:45	BGS	M
Total Well Depth	148.40		Feet		Field			5/23/19 13:45	BGS	M
Volume in Water Column	148.71		Gallons		Field			5/23/19 13:45	BGS	M
Water Level After Purge	82.28		Feet		Field			5/23/19 13:45	BGS	M
Well Volumes Purged	0.85		Vol		Field			5/23/19 13:45	BGS	M

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732006** Date Collected: 5/23/2019 14:04 Matrix: Ground Water

Sample ID: **FFMP016W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/30/19 03:10	PDK	D
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/30/19 03:10	PDK	D
Benzene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Bromoform	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/30/19 03:10	PDK	D
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Chloroform	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/30/19 03:10	PDK	D
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/30/19 03:10	PDK	D
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/30/19 03:10	PDK	D
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/30/19 03:10	PDK	D

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732006** Date Collected: 5/23/2019 14:04 Matrix: Ground Water

Sample ID: **FFMP016W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Styrene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Toluene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/30/19 03:10	PDK	D
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/30/19 03:10	PDK	D
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/30/19 03:10	PDK	D
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 03:10	PDK	D
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	121		%	62 - 133	SW846 8260B			5/30/19 03:10	PDK	D
4-Bromofluorobenzene (S)	109		%	79 - 114	SW846 8260B			5/30/19 03:10	PDK	D
Dibromofluoromethane (S)	107		%	78 - 116	SW846 8260B			5/30/19 03:10	PDK	D
Toluene-d8 (S)	84.1		%	76 - 127	SW846 8260B			5/30/19 03:10	PDK	D
Library Search - Volatiles										
Cyclotrisiloxane, hexamethy	8.7	J N	ug/L		SW846 8260B			5/30/19 03:10	PDK	D
WET CHEMISTRY										
Alkalinity, Bicarbonate	30		mg/L	5	SM2320B-2011			5/30/19 04:42	MLM	F
Alkalinity, Total	30	3	mg/L	5	SM2320B-2011			5/30/19 04:42	MLM	F
Ammonia-N	ND		mg/L	0.100	D6919-09			5/30/19 13:49	AK	J
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/28/19 11:36	AK	J
Chloride	70.6		mg/L	2.0	EPA 300.0			5/25/19 07:35	CHW	F
Fluoride	ND		mg/L	0.20	EPA 300.0			5/25/19 07:35	CHW	F
Nitrate-N	9.6		mg/L	0.20	EPA 300.0			5/25/19 07:35	CHW	F
pH	6.64	1	pH_Units		S4500HB-11			5/30/19 04:42	MLM	F
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:29	C_D	5/30/19 05:54	C_D	C
Specific Conductance	431		umhos/cm	1	SM2510B-2011			5/30/19 04:42	MLM	F
Sulfate	31.5		mg/L	2.0	EPA 300.0			5/25/19 07:35	CHW	F
Total Dissolved Solids	297	2	mg/L	5	S2540C-11			5/30/19 12:00	EXS	F
Total Organic Carbon (TOC)	1.3		mg/L	0.50	SM5310B-2011			5/25/19 02:12	PAG	A
Turbidity	0.13		NTU	0.10	SM2130B-2011			5/24/19 08:53	R2B	F

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732006** Date Collected: 5/23/2019 14:04 Matrix: Ground Water

Sample ID: **FFMP016W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Barium, Total	0.062		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Barium, Dissolved	0.056		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Calcium, Total	35.0		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Calcium, Dissolved	29.7		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Iron, Total	ND		mg/L	0.056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Magnesium, Total	17.1		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Magnesium, Dissolved	14.5		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Manganese, Total	0.011		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Manganese, Dissolved	0.011		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	5/30/19 03:29	MSA	5/30/19 07:36	MSA	L
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	6/3/19 08:55	MSA	6/3/19 14:16	MSA	K
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Potassium, Total	2.4		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Potassium, Dissolved	2.4		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Sodium, Total	28.5		mg/L	0.11	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Sodium, Dissolved	25.2		mg/L	0.11	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1
Zinc, Total	0.0086		mg/L	0.0056	SW846 6020A	5/30/19 14:20	AHI	7/1/19 16:16	MO	L1

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732006** Date Collected: 5/23/2019 14:04 Matrix: Ground Water

Sample ID: **FFMP016W** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.013		mg/L	0.0056	SW846 6020A	5/31/19 13:30	AH	7/8/19 15:14	MO	K1
FIELD PARAMETERS										
Depth to Water Level	16.11		Feet		Field			5/23/19 14:04	BGS	M
Elev Top MW Casing above MSL	474.60		Feet		Field			5/23/19 14:04	BGS	M
Ground Water Elevation	458.49		ft/MSL		Field			5/23/19 14:04	BGS	M
pH, Field (SM4500B)	5.16		pH_Units		Field			5/23/19 14:04	BGS	M
Sample Depth	135.00		Feet		Field			5/23/19 14:04	BGS	M
Specific Conductance, Field	475		umhos/cm	1	Field			5/23/19 14:04	BGS	M
Temperature	9.66		Deg. C		Field			5/23/19 14:04	BGS	M
Total Well Depth	149.80		Feet		Field			5/23/19 14:04	BGS	M
Volume in Water Column	348.93		Gallons		Field			5/23/19 14:04	BGS	M

Susan J. Scherer

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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732007** Date Collected: 5/23/2019 13:30 Matrix: Water

Sample ID: **FIELD BLANK** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/30/19 00:04	PDK	A
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/30/19 00:04	PDK	A
Benzene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Bromoform	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/30/19 00:04	PDK	A
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Chloroform	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/30/19 00:04	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/30/19 00:04	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/30/19 00:04	PDK	A
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/30/19 00:04	PDK	A

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732007** Date Collected: 5/23/2019 13:30 Matrix: Water

Sample ID: **FIELD BLANK** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Styrene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Toluene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/30/19 00:04	PDK	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/30/19 00:04	PDK	A
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/30/19 00:04	PDK	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/30/19 00:04	PDK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	62 - 133	SW846 8260B			5/30/19 00:04	PDK	A
4-Bromofluorobenzene (S)	109		%	79 - 114	SW846 8260B			5/30/19 00:04	PDK	A
Dibromofluoromethane (S)	110		%	78 - 116	SW846 8260B			5/30/19 00:04	PDK	A
Toluene-d8 (S)	84.4		%	76 - 127	SW846 8260B			5/30/19 00:04	PDK	A
Library Search - Volatiles										
Cyclotrisiloxane, hexamethy	11.0	J N	ug/L		SW846 8260B			5/30/19 00:04	PDK	A

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732008** Date Collected: 5/23/2019 15:21 Matrix: Water

Sample ID: **TRIP BLANK** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/29/19 23:40	PDK	A
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/29/19 23:40	PDK	A
Benzene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Bromoform	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/29/19 23:40	PDK	A
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Chloroform	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/29/19 23:40	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/29/19 23:40	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/29/19 23:40	PDK	A
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/29/19 23:40	PDK	A

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ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035732008** Date Collected: 5/23/2019 15:21 Matrix: Water

Sample ID: **TRIP BLANK** Date Received: 5/23/2019 15:21

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Styrene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Toluene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/29/19 23:40	PDK	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/29/19 23:40	PDK	A
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/29/19 23:40	PDK	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/29/19 23:40	PDK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	62 - 133	SW846 8260B			5/29/19 23:40	PDK	A
4-Bromofluorobenzene (S)	107		%	79 - 114	SW846 8260B			5/29/19 23:40	PDK	A
Dibromofluoromethane (S)	105		%	78 - 116	SW846 8260B			5/29/19 23:40	PDK	A
Toluene-d8 (S)	84.5		%	76 - 127	SW846 8260B			5/29/19 23:40	PDK	A
Library Search - Volatiles										
Cyclotrisiloxane, hexamethy	3.8	J N	ug/L		SW846 8260B			5/29/19 23:40	PDK	A

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3035732001	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.				
3035732001	2	FFMP033W	S2540C-11	Total Dissolved Solids
The method blank associated with the sample was recovered at 6 mg/L. The method reporting limit for this analysis is <5 mg/L. A bias may exist with the result.				
3035732001	3	FFMP033W	S2540C-11	Total Dissolved Solids
The RPD associated with this sample was recovered at 6.4%. The RPD is outside method acceptance limits of 5.0%. The results used to calculate the RPD were 243 and 259 mg/L.				
3035732001	4	FFMP033W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035732001	5	FFMP033W	SW846 6020A	Arsenic, Dissolved
The RSD for arsenic was recovered at 23.097% in the ICSAB. The method acceptance limit for this analyte is 20.00%. The sample was commented and reported.				
3035732001	6	FFMP033W	SW846 6020A	Chromium, Dissolved
The low level continuing calibration check (LLCCV) associated with this sample was outside of the required range, biased high for chromium. The chromium analyte concentration in the sample was commented and reported.				
3035732001	7	FFMP033W	SW846 6020A	Iron, Dissolved
The continuing calibration check (CCV) associated with this sample was outside of the required range, biased high for iron. The iron analyte concentration in the sample was commented and reported.				
3035732001	8	FFMP033W	SW846 6020A	Selenium, Dissolved
The continuing calibration check (CCV) associated with this sample was outside of the required range, biased high for selenium. The selenium analyte concentration in the sample was less than the PQL. According to the method, the sample was commented and reported.				
3035732002	1	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.				
3035732002	2	FFMP031W	S2540C-11	Total Dissolved Solids
The method blank associated with the sample was recovered at 6 mg/L. The method reporting limit for this analysis is <5 mg/L. A bias may exist with the result.				
3035732002	3	FFMP031W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035732003	1	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.				
3035732003	2	FFMP002W	S2540C-11	Total Dissolved Solids
The method blank associated with the sample was recovered at 6 mg/L. The method reporting limit for this analysis is <5 mg/L. A bias may exist with the result.				
3035732003	3	FFMP002W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035732003	4	FFMP002W	EPA 300.0	Nitrate-N
The sample was originally run within hold time, but required further analysis that exceeded hold time.				

ANALYTICAL RESULTS

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

3035732004	1	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.				
3035732004	2	FFMP032W	S2540C-11	Total Dissolved Solids
The method blank associated with the sample was recovered at 6 mg/L. The method reporting limit for this analysis is <5 mg/L. A bias may exist with the result.				
3035732004	3	FFMP032W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035732005	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.				
3035732005	2	FFMP03AW	S2540C-11	Total Dissolved Solids
The method blank associated with the sample was recovered at 6 mg/L. The method reporting limit for this analysis is <5 mg/L. A bias may exist with the result.				
3035732005	3	FFMP03AW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035732006	1	FFMP016W	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.				
3035732006	2	FFMP016W	S2540C-11	Total Dissolved Solids
The method blank associated with the sample was recovered at 6 mg/L. The method reporting limit for this analysis is <5 mg/L. A bias may exist with the result.				
3035732006	3	FFMP016W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Analysis Method	Prep Method
3035732001	FFMP033W	D6919-09	
3035732001	FFMP033W	EPA 300.0	
3035732001	FFMP033W	EPA 410.4	
3035732001	FFMP033W	Field	
3035732001	FFMP033W	Lib Search VOC	
3035732001	FFMP033W	S2540C-11	
3035732001	FFMP033W	S4500HB-11	
3035732001	FFMP033W	SM2130B-2011	
3035732001	FFMP033W	SM2320B-2011	
3035732001	FFMP033W	SM2510B-2011	
3035732001	FFMP033W	SM5310B-2011	
3035732001	FFMP033W	SW846 6020A	SW846 3015
3035732001	FFMP033W	SW846 7470A	SW846 7470A
3035732001	FFMP033W	SW846 8260B	
3035732001	FFMP033W	SW846 9066	420.4/9066
3035732002	FFMP031W	D6919-09	
3035732002	FFMP031W	EPA 300.0	
3035732002	FFMP031W	EPA 410.4	
3035732002	FFMP031W	Field	
3035732002	FFMP031W	Lib Search VOC	
3035732002	FFMP031W	S2540C-11	
3035732002	FFMP031W	S4500HB-11	
3035732002	FFMP031W	SM2130B-2011	
3035732002	FFMP031W	SM2320B-2011	
3035732002	FFMP031W	SM2510B-2011	
3035732002	FFMP031W	SM5310B-2011	
3035732002	FFMP031W	SW846 6020A	SW846 3015
3035732002	FFMP031W	SW846 7470A	SW846 7470A
3035732002	FFMP031W	SW846 8260B	
3035732002	FFMP031W	SW846 9066	420.4/9066
3035732003	FFMP002W	D6919-09	
3035732003	FFMP002W	EPA 300.0	
3035732003	FFMP002W	EPA 410.4	
3035732003	FFMP002W	Field	
3035732003	FFMP002W	Lib Search VOC	
3035732003	FFMP002W	S2540C-11	
3035732003	FFMP002W	S4500HB-11	
3035732003	FFMP002W	SM2130B-2011	
3035732003	FFMP002W	SM2320B-2011	
3035732003	FFMP002W	SM2510B-2011	
3035732003	FFMP002W	SM5310B-2011	
3035732003	FFMP002W	SW846 6020A	SW846 3015
3035732003	FFMP002W	SW846 7470A	SW846 7470A
3035732003	FFMP002W	SW846 8260B	
3035732003	FFMP002W	SW846 9066	420.4/9066
3035732004	FFMP032W	D6919-09	

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Analysis Method	Prep Method
3035732004	FFMP032W	EPA 300.0	
3035732004	FFMP032W	EPA 410.4	
3035732004	FFMP032W	Field	
3035732004	FFMP032W	Lib Search VOC	
3035732004	FFMP032W	S2540C-11	
3035732004	FFMP032W	S4500HB-11	
3035732004	FFMP032W	SM2130B-2011	
3035732004	FFMP032W	SM2320B-2011	
3035732004	FFMP032W	SM2510B-2011	
3035732004	FFMP032W	SM5310B-2011	
3035732004	FFMP032W	SW846 6020A	SW846 3015
3035732004	FFMP032W	SW846 7470A	SW846 7470A
3035732004	FFMP032W	SW846 8260B	
3035732004	FFMP032W	SW846 9066	420.4/9066
3035732005	FFMP03AW	D6919-09	
3035732005	FFMP03AW	EPA 300.0	
3035732005	FFMP03AW	EPA 410.4	
3035732005	FFMP03AW	Field	
3035732005	FFMP03AW	Lib Search VOC	
3035732005	FFMP03AW	S2540C-11	
3035732005	FFMP03AW	S4500HB-11	
3035732005	FFMP03AW	SM2130B-2011	
3035732005	FFMP03AW	SM2320B-2011	
3035732005	FFMP03AW	SM2510B-2011	
3035732005	FFMP03AW	SM5310B-2011	
3035732005	FFMP03AW	SW846 6020A	SW846 3015
3035732005	FFMP03AW	SW846 7470A	SW846 7470A
3035732005	FFMP03AW	SW846 8260B	
3035732005	FFMP03AW	SW846 9066	420.4/9066
3035732006	FFMP016W	D6919-09	
3035732006	FFMP016W	EPA 300.0	
3035732006	FFMP016W	EPA 410.4	
3035732006	FFMP016W	Field	
3035732006	FFMP016W	Lib Search VOC	
3035732006	FFMP016W	S2540C-11	
3035732006	FFMP016W	S4500HB-11	
3035732006	FFMP016W	SM2130B-2011	
3035732006	FFMP016W	SM2320B-2011	
3035732006	FFMP016W	SM2510B-2011	
3035732006	FFMP016W	SM5310B-2011	
3035732006	FFMP016W	SW846 6020A	SW846 3015
3035732006	FFMP016W	SW846 7470A	SW846 7470A
3035732006	FFMP016W	SW846 8260B	
3035732006	FFMP016W	SW846 9066	420.4/9066
3035732007	FIELD BLANK	Lib Search VOC	
3035732007	FIELD BLANK	SW846 8260B	

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3035732 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Analysis Method	Prep Method
3035732008	TRIP BLANK	Lib Search VOC	
3035732008	TRIP BLANK	SW846 8260B	

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

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

1 of 1

Container Type	AG	AN	CG	PL	PL	—	—	PL	PL		Receiving Lab)	
Container Size	40 ml	125 ml	40 ml	500 ml	500 ml	—	—	250 ml	125 ml	125 ml	Cooler Temp: ____ Therm ID: ____	
Preservative	HCl	H2SO4	HCl	None	None	—	—	H2SO4	HNO3	HNO3	No. of Coolers: ____	Y / N / Initial

Client Name: Lancaster County Solid Waste MA

Address: 1299 Harrisburg Pike, P.O. Box 4424, Lancaster, PA 17604

Contact: Mark Reider

Phone#: (717) 735-0193

Project Name/#: Frey Farm Form 19A

Bill To: Lancaster County Solid Waste MA

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

Date Required: ____ Approved By: ____

Email? [X]-Y mreider@LCSWMA.org

Fax? [X]-Y No.: (717) 397-9973

ANALYSES/METHOD REQUESTED (505)

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	8260 VOCs - Form 19A + Subtitle D + TICs	pH, Cl, SpC, F, SO4, NO3, Tb, TDS	Alkalinity, HCO3	*FM	Sample Depth for AUX Data	NH3-N, COD	Diss Metals Form 19A (Field Filered)	Total Metals Form 19A + Subtitle D
					Enter Number of Containers Per Sample or Field Results Below.									
1. FFMP033W	05/23/19	0953	G	GW	2	1	2	2	2	X	X	1	1	1
2. FFMP031W	05/23/19	1107	G	GW	2	1	2	2	2	X	X	1	1	1
3. FFMP002W	05/23/19	1151	G	GW	2	1	2	2	2	X	X	1	1	1
4. FFMP032W	05/23/19	1231	G	GW	2	1	2	2	2	X	X	1	1	1
5. FFMP03AW	05/23/19	1345	G	GW	2	1	2	2	2	X	X	1	1	1
6. FFMP016W	05/23/19	1404	G	GW	2	1	2	2	2	X	X	1	1	1
7. Field Blank	05/23/19	1330	G	GW			2			505/AMS		5/23/19		
8. Trip Blank	05/23/19	NFI	G	GW			2							
9														
10														

	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:

Project Comments:

LOGGED BY(signature): DATE TIME

REVIEWED BY(signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [illegible] ALS	5/23/19	1721	2 [illegible] ALS	5/24/19	1521
3			4		
5			6		
7			8		
9			10		

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

Special Processing: USACE [ ] Navy [ ]

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

Reportable to PADEP? Yes [ ] PWSID # ____

Sample Disposal: Lab [X] Special [ ]

EDDS: Format Type- ____

* G=Grab; C=Composite

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

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Rev 8/04

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

Condition of Sample Receipt Form

Client: LCSWMA | Work Order #: 3035732 | Initials: KM | Date: 5/23/19

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?	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): 2°C

Thermometer ID: 401

Radiological (µCi): _____

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

pH will be run w/ qualifier due to hold time

COC corrections by SAS/DMS 5/23/19

Rev. 4/29/2019

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May 31, 2019

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:	**3035363**
Purchase Order:	**PO1000126**	Workorder ID:	**2ND QTR 2019 FFMP-FORM 19A**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, May 22, 2019.

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.

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

CC: Mr. Nicholas Rogers , 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.

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3035363001	FFMP028W	Ground Water	5/22/2019 11:02	5/22/2019 15:39	Mr. Brian G Shade
3035363002	FFMP025W	Ground Water	5/22/2019 11:35	5/22/2019 15:39	Mr. Brian G Shade
3035363003	FFMP02DW	Ground Water	5/22/2019 12:50	5/22/2019 15:39	Mr. Brian G Shade
3035363004	FFMP02SW	Ground Water	5/22/2019 13:08	5/22/2019 15:39	Mr. Brian G Shade
3035363005	FFMP015W	Ground Water	5/22/2019 14:26	5/22/2019 15:39	Mr. Brian G Shade
3035363006	FIELD BLANK	Water	5/22/2019 11:30	5/22/2019 15:39	Mr. Brian G Shade
3035363007	TRIP BLANK	Water	5/22/2019 15:39	5/22/2019 15:39	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

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 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.

Standard Acronyms/Flags

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

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363001** Date Collected: 5/22/2019 11:02 Matrix: Ground Water

Sample ID: **FFMP028W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/25/19 02:44	TMP	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/25/19 02:44	TMP	J
Benzene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Bromoform	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/25/19 02:44	TMP	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Chloroform	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/25/19 02:44	TMP	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/25/19 02:44	TMP	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/25/19 02:44	TMP	J
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/25/19 02:44	TMP	J

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363001** Date Collected: 5/22/2019 11:02 Matrix: Ground Water
Sample ID: **FFMP028W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Styrene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Toluene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/25/19 02:44	TMP	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/25/19 02:44	TMP	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/25/19 02:44	TMP	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 02:44	TMP	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	109		%	62 - 133	SW846 8260B			5/25/19 02:44	TMP	J
4-Bromofluorobenzene (S)	104		%	79 - 114	SW846 8260B			5/25/19 02:44	TMP	J
Dibromofluoromethane (S)	103		%	78 - 116	SW846 8260B			5/25/19 02:44	TMP	J
Toluene-d8 (S)	101		%	76 - 127	SW846 8260B			5/25/19 02:44	TMP	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/25/19 02:44	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	33		mg/L	5	SM2320B-2011			5/24/19 12:38	MLM	B
Alkalinity, Total	33	1	mg/L	5	SM2320B-2011			5/24/19 12:38	MLM	B
Ammonia-N	ND		mg/L	0.100	D6919-09			5/28/19 22:11	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/24/19 16:16	AK	C
Chloride	90.0		mg/L	2.0	EPA 300.0			5/23/19 09:37	CHW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			5/23/19 09:37	CHW	B
Nitrate-N	17.5	3	mg/L	0.50	EPA 300.0			5/25/19 14:40	CHW	B
pH	6.52	2	pH_Units		S4500HB-11			5/24/19 12:38	MLM	B
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:28	C_D	5/30/19 05:54	C_D	I
Specific Conductance	518		umhos/cm	1	SM2510B-2011			5/24/19 12:38	MLM	B
Sulfate	25.0		mg/L	2.0	EPA 300.0			5/23/19 09:37	CHW	B
Total Dissolved Solids	333		mg/L	5	S2540C-11			5/29/19 12:20	EXS	B
Total Organic Carbon (TOC)	1.3		mg/L	0.50	SM5310B-2011			5/23/19 17:39	PAG	G
Turbidity	0.17		NTU	0.10	SM2130B-2011			5/23/19 07:41	MBW	B

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363001** Date Collected: 5/22/2019 11:02 Matrix: Ground Water

Sample ID: **FFMP028W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 12:28	MO	E1
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Barium, Total	0.066		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Barium, Dissolved	0.067		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Calcium, Total	30.8		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Calcium, Dissolved	29.5		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Iron, Total	ND		mg/L	0.056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Magnesium, Total	18.0		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Magnesium, Dissolved	16.0		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Manganese, Total	0.018		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Manganese, Dissolved	0.040		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 07:59	MSA	E
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:49	MSA	D
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Potassium, Total	2.1		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Potassium, Dissolved	1.8		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Sodium, Total	27.0		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Sodium, Dissolved	24.2		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1
Zinc, Total	0.011		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:48	MO	E1

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363001** Date Collected: 5/22/2019 11:02 Matrix: Ground Water

Sample ID: **FFMP028W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.012		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:34	MO	D1
FIELD PARAMETERS										
Depth to Water Level	6.17		Feet		Field			5/22/19 11:02	BGS	F
Elev Top MW Casing above MSL	465.00		Feet		Field			5/22/19 11:02	BGS	F
Flow Rate	2.78		gal/min		Field			5/22/19 11:02	BGS	F
Ground Water Elevation	458.83		ft/MSL		Field			5/22/19 11:02	BGS	F
pH, Field (SM4500B)	5.48		pH_Units		Field			5/22/19 11:02	BGS	F
Sample Depth	50.00		Feet		Field			5/22/19 11:02	BGS	F
Specific Conductance, Field	556		umhos/cm	1	Field			5/22/19 11:02	BGS	F
Temperature	10.64		Deg. C		Field			5/22/19 11:02	BGS	F
Total Well Depth	60.00		Feet		Field			5/22/19 11:02	BGS	F
Volume in Water Column	79.13		Gallons		Field			5/22/19 11:02	BGS	F
Water Level After Purge	32.88		Feet		Field			5/22/19 11:02	BGS	F
Well Volumes Purged	2.11		Vol		Field			5/22/19 11:02	BGS	F

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363002** Date Collected: 5/22/2019 11:35 Matrix: Ground Water

Sample ID: **FFMP025W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/25/19 03:06	TMP	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/25/19 03:06	TMP	J
Benzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Bromoform	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/25/19 03:06	TMP	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Chloroform	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/25/19 03:06	TMP	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/25/19 03:06	TMP	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/25/19 03:06	TMP	J
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/25/19 03:06	TMP	J

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363002** Date Collected: 5/22/2019 11:35 Matrix: Ground Water

Sample ID: **FFMP025W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Styrene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Toluene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/25/19 03:06	TMP	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/25/19 03:06	TMP	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/25/19 03:06	TMP	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 03:06	TMP	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	109		%	62 - 133	SW846 8260B			5/25/19 03:06	TMP	J
4-Bromofluorobenzene (S)	105		%	79 - 114	SW846 8260B			5/25/19 03:06	TMP	J
Dibromofluoromethane (S)	104		%	78 - 116	SW846 8260B			5/25/19 03:06	TMP	J
Toluene-d8 (S)	100		%	76 - 127	SW846 8260B			5/25/19 03:06	TMP	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/25/19 03:06	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	33		mg/L	5	SM2320B-2011			5/24/19 17:21	MLM	B
Alkalinity, Total	33	1	mg/L	5	SM2320B-2011			5/24/19 17:21	MLM	B
Ammonia-N	ND		mg/L	0.100	D6919-09			5/28/19 22:53	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/24/19 16:16	AK	C
Chloride	59.7		mg/L	2.0	EPA 300.0			5/23/19 09:50	CHW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			5/23/19 09:50	CHW	B
Nitrate-N	8.6		mg/L	0.20	EPA 300.0			5/23/19 09:50	CHW	B
pH	6.62	2	pH_Units		S4500HB-11			5/24/19 17:21	MLM	B
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:28	C_D	5/30/19 05:54	C_D	I
Specific Conductance	320		umhos/cm	1	SM2510B-2011			5/24/19 17:21	MLM	B
Sulfate	27.3		mg/L	2.0	EPA 300.0			5/23/19 09:50	CHW	B
Total Dissolved Solids	230		mg/L	5	S2540C-11			5/29/19 12:20	EXS	B
Total Organic Carbon (TOC)	1.0		mg/L	0.50	SM5310B-2011			5/23/19 17:39	PAG	G
Turbidity	0.11		NTU	0.10	SM2130B-2011			5/23/19 07:41	MBW	B

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363002** Date Collected: 5/22/2019 11:35 Matrix: Ground Water

Sample ID: **FFMP025W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Barium, Total	0.047		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Barium, Dissolved	0.045		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Calcium, Total	17.3		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Calcium, Dissolved	17.3		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Iron, Total	ND		mg/L	0.056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Magnesium, Total	11.9		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Magnesium, Dissolved	12.0		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Manganese, Total	0.014		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Manganese, Dissolved	0.0062		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 08:00	MSA	E
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:50	MSA	D
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Potassium, Total	1.8		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Potassium, Dissolved	1.8		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Sodium, Total	18.2		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Sodium, Dissolved	18.4		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1
Zinc, Total	0.0072		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:51	MO	E1

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363002** Date Collected: 5/22/2019 11:35 Matrix: Ground Water

Sample ID: **FFMP025W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.0059		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:37	MO	D1
FIELD PARAMETERS										
Depth to Water Level	24.56		Feet		Field			5/22/19 11:35	BGS	F
Elev Top MW Casing above MSL	476.80		Feet		Field			5/22/19 11:35	BGS	F
Flow Rate	3.77		gal/min		Field			5/22/19 11:35	BGS	F
Ground Water Elevation	452.24		ft/MSL		Field			5/22/19 11:35	BGS	F
pH, Field (SM4500B)	4.87		pH_Units		Field			5/22/19 11:35	BGS	F
Sample Depth	39.00		Feet		Field			5/22/19 11:35	BGS	F
Specific Conductance, Field	362		umhos/cm	1	Field			5/22/19 11:35	BGS	F
Temperature	9.64		Deg. C		Field			5/22/19 11:35	BGS	F
Total Well Depth	41.50		Feet		Field			5/22/19 11:35	BGS	F
Volume in Water Column	24.90		Gallons		Field			5/22/19 11:35	BGS	F
Water Level After Purge	24.71		Feet		Field			5/22/19 11:35	BGS	F
Well Volumes Purged	1.06		Vol		Field			5/22/19 11:35	BGS	F

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363003** Date Collected: 5/22/2019 12:50 Matrix: Ground Water

Sample ID: **FFMP02DW** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/25/19 03:29	TMP	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/25/19 03:29	TMP	J
Benzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Bromoform	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/25/19 03:29	TMP	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Chloroform	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/25/19 03:29	TMP	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/25/19 03:29	TMP	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/25/19 03:29	TMP	J
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/25/19 03:29	TMP	J

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363003** Date Collected: 5/22/2019 12:50 Matrix: Ground Water
Sample ID: **FFMP02DW** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Styrene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Toluene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/25/19 03:29	TMP	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/25/19 03:29	TMP	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/25/19 03:29	TMP	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 03:29	TMP	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	110		%	62 - 133	SW846 8260B			5/25/19 03:29	TMP	J
4-Bromofluorobenzene (S)	105		%	79 - 114	SW846 8260B			5/25/19 03:29	TMP	J
Dibromofluoromethane (S)	104		%	78 - 116	SW846 8260B			5/25/19 03:29	TMP	J
Toluene-d8 (S)	101		%	76 - 127	SW846 8260B			5/25/19 03:29	TMP	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/25/19 03:29	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	129		mg/L	5	SM2320B-2011			5/24/19 17:31	MLM	B
Alkalinity, Total	129	1	mg/L	5	SM2320B-2011			5/24/19 17:31	MLM	B
Ammonia-N	ND		mg/L	0.100	D6919-09			5/29/19 14:27	NJA	C
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/24/19 16:16	AK	C
Chloride	296		mg/L	5.0	EPA 300.0			5/25/19 14:56	CHW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			5/23/19 10:02	CHW	B
Nitrate-N	4.1		mg/L	0.20	EPA 300.0			5/23/19 10:02	CHW	B
pH	7.87	2	pH_Units		S4500HB-11			5/24/19 17:31	MLM	B
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:28	C_D	5/30/19 05:54	C_D	I
Specific Conductance	1280		umhos/cm	1	SM2510B-2011			5/24/19 17:31	MLM	B
Sulfate	36.9		mg/L	2.0	EPA 300.0			5/23/19 10:02	CHW	B
Total Dissolved Solids	369		mg/L	5	S2540C-11			5/29/19 12:20	EXS	B
Total Organic Carbon (TOC)	0.95		mg/L	0.50	SM5310B-2011			5/23/19 17:39	PAG	G
Turbidity	1.82		NTU	0.10	SM2130B-2011			5/23/19 07:41	MBW	B

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363003** Date Collected: 5/22/2019 12:50 Matrix: Ground Water

Sample ID: **FFMP02DW** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Barium, Total	0.16		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Barium, Dissolved	0.17		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Calcium, Total	93.5		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Calcium, Dissolved	91.9		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Iron, Total	0.15		mg/L	0.056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Magnesium, Total	18.6		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Magnesium, Dissolved	18.8		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Manganese, Total	0.39		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Manganese, Dissolved	0.38		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 08:02	MSA	E
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:51	MSA	D
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Potassium, Total	1.7		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Potassium, Dissolved	2.0		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Sodium, Total	91.9		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Sodium, Dissolved	92.5		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1
Zinc, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:54	MO	E1

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363003** Date Collected: 5/22/2019 12:50 Matrix: Ground Water

Sample ID: **FFMP02DW** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:40	MO	D1
FIELD PARAMETERS										
Depth to Water Level	18.24		Feet		Field			5/22/19 12:50	BGS	F
Elev Top MW Casing above MSL	509.60		Feet		Field			5/22/19 12:50	BGS	F
Flow Rate	1.51		gal/min		Field			5/22/19 12:50	BGS	F
Ground Water Elevation	491.36		ft/MSL		Field			5/22/19 12:50	BGS	F
pH, Field (SM4500B)	7.08		pH_Units		Field			5/22/19 12:50	BGS	F
Sample Depth	120.00		Feet		Field			5/22/19 12:50	BGS	F
Specific Conductance, Field	1353		umhos/cm	1	Field			5/22/19 12:50	BGS	F
Temperature	12.86		Deg. C		Field			5/22/19 12:50	BGS	F
Total Well Depth	153.00		Feet		Field			5/22/19 12:50	BGS	F
Volume in Water Column	198.10		Gallons		Field			5/22/19 12:50	BGS	F
Water Level After Purge	49.75		Feet		Field			5/22/19 12:50	BGS	F
Well Volumes Purged	0.46		Vol		Field			5/22/19 12:50	BGS	F

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363004** Date Collected: 5/22/2019 13:08 Matrix: Ground Water

Sample ID: **FFMP02SW** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/25/19 03:51	TMP	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/25/19 03:51	TMP	J
Benzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Bromoform	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/25/19 03:51	TMP	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Chloroform	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/25/19 03:51	TMP	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/25/19 03:51	TMP	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/25/19 03:51	TMP	J
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/25/19 03:51	TMP	J

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363004** Date Collected: 5/22/2019 13:08 Matrix: Ground Water

Sample ID: **FFMP02SW** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Styrene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Toluene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/25/19 03:51	TMP	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/25/19 03:51	TMP	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/25/19 03:51	TMP	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 03:51	TMP	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	108		%	62 - 133	SW846 8260B			5/25/19 03:51	TMP	J
4-Bromofluorobenzene (S)	106		%	79 - 114	SW846 8260B			5/25/19 03:51	TMP	J
Dibromofluoromethane (S)	103		%	78 - 116	SW846 8260B			5/25/19 03:51	TMP	J
Toluene-d8 (S)	101		%	76 - 127	SW846 8260B			5/25/19 03:51	TMP	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/25/19 03:51	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	13		mg/L	5	SM2320B-2011			5/24/19 17:39	MLM	B
Alkalinity, Total	13	1	mg/L	5	SM2320B-2011			5/24/19 17:39	MLM	B
Ammonia-N	0.235		mg/L	0.100	D6919-09			5/29/19 14:41	NJA	C
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/24/19 16:16	AK	C
Chloride	68.4		mg/L	2.0	EPA 300.0			5/23/19 11:30	CHW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			5/23/19 11:30	CHW	B
Nitrate-N	16.0		mg/L	0.20	EPA 300.0			5/23/19 11:30	CHW	B
pH	6.53	2	pH_Units		S4500HB-11			5/24/19 17:39	MLM	B
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:28	C_D	5/30/19 05:54	C_D	I
Specific Conductance	496		umhos/cm	1	SM2510B-2011			5/24/19 17:39	MLM	B
Sulfate	24.0		mg/L	2.0	EPA 300.0			5/23/19 11:30	CHW	B
Total Dissolved Solids	878		mg/L	5	S2540C-11			5/29/19 12:20	EXS	B
Total Organic Carbon (TOC)	5.8		mg/L	0.50	SM5310B-2011			5/23/19 17:39	PAG	G
Turbidity	45.4		NTU	0.10	SM2130B-2011			5/23/19 07:41	MBW	B

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363004** Date Collected: 5/22/2019 13:08 Matrix: Ground Water

Sample ID: **FFMP02SW** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Barium, Total	0.071		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Barium, Dissolved	0.072		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Calcium, Total	14.9		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Calcium, Dissolved	15.4		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Chromium, Total	0.085		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Chromium, Dissolved	0.0062		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Copper, Total	0.0094		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Iron, Total	2.5		mg/L	0.056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Iron, Dissolved	0.12		mg/L	0.056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Magnesium, Total	6.7		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Magnesium, Dissolved	6.9		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Manganese, Total	0.026		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Manganese, Dissolved	0.017		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 08:03	MSA	E
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:53	MSA	D
Nickel, Total	0.052		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Potassium, Total	4.5		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Potassium, Dissolved	4.1		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Sodium, Total	28.6		mg/L	0.11	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Sodium, Dissolved	41.0		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1
Zinc, Total	0.010		mg/L	0.0056	SW846 6020A	5/25/19 13:35	AHI	5/31/19 10:57	MO	E1

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363004** Date Collected: 5/22/2019 13:08 Matrix: Ground Water

Sample ID: **FFMP02SW** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.014		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:43	MO	D1
FIELD PARAMETERS										
Depth to Water Level	14.35		Feet		Field			5/22/19 13:08	BGS	F
Elev Top MW Casing above MSL	509.90		Feet		Field			5/22/19 13:08	BGS	F
Flow Rate	0.50		gal/min		Field			5/22/19 13:08	BGS	F
Ground Water Elevation	495.55		ft/MSL		Field			5/22/19 13:08	BGS	F
pH, Field (SM4500B)	6.05		pH_Units		Field			5/22/19 13:08	BGS	F
Sample Depth	18.00		Feet		Field			5/22/19 13:08	BGS	F
Specific Conductance, Field	265		umhos/cm	1	Field			5/22/19 13:08	BGS	F
Temperature	12.70		Deg. C		Field			5/22/19 13:08	BGS	F
Total Well Depth	22.70		Feet		Field			5/22/19 13:08	BGS	F
Volume in Water Column	5.43		Gallons		Field			5/22/19 13:08	BGS	F
Water Level After Purge	16.24		Feet		Field			5/22/19 13:08	BGS	F
Well Volumes Purged	1.11		Vol		Field			5/22/19 13:08	BGS	F

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363005** Date Collected: 5/22/2019 14:26 Matrix: Ground Water

Sample ID: **FFMP015W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/25/19 04:14	TMP	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/25/19 04:14	TMP	J
Benzene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Bromoform	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/25/19 04:14	TMP	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Chloroform	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/25/19 04:14	TMP	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/25/19 04:14	TMP	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/25/19 04:14	TMP	J
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/25/19 04:14	TMP	J

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363005** Date Collected: 5/22/2019 14:26 Matrix: Ground Water
Sample ID: **FFMP015W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Styrene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Toluene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/25/19 04:14	TMP	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/25/19 04:14	TMP	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/25/19 04:14	TMP	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 04:14	TMP	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	109		%	62 - 133	SW846 8260B			5/25/19 04:14	TMP	J
4-Bromofluorobenzene (S)	104		%	79 - 114	SW846 8260B			5/25/19 04:14	TMP	J
Dibromofluoromethane (S)	102		%	78 - 116	SW846 8260B			5/25/19 04:14	TMP	J
Toluene-d8 (S)	101		%	76 - 127	SW846 8260B			5/25/19 04:14	TMP	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/25/19 04:14	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	15		mg/L	5	SM2320B-2011			5/24/19 17:48	MLM	B
Alkalinity, Total	15	1	mg/L	5	SM2320B-2011			5/24/19 17:48	MLM	B
Ammonia-N	ND		mg/L	0.100	D6919-09			5/29/19 15:22	NJA	C
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/24/19 16:16	AK	C
Chloride	8.6		mg/L	2.0	EPA 300.0			5/23/19 11:42	CHW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			5/23/19 11:42	CHW	B
Nitrate-N	6.4		mg/L	0.20	EPA 300.0			5/23/19 11:42	CHW	B
pH	6.40	2	pH_Units		S4500HB-11			5/24/19 17:48	MLM	B
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:28	C_D	5/30/19 05:54	C_D	I
Specific Conductance	213		umhos/cm	1	SM2510B-2011			5/24/19 17:48	MLM	B
Sulfate	41.9		mg/L	2.0	EPA 300.0			5/23/19 11:42	CHW	B
Total Dissolved Solids	233		mg/L	5	S2540C-11			5/29/19 12:20	EXS	B
Total Organic Carbon (TOC)	1.1		mg/L	0.50	SM5310B-2011			5/23/19 17:39	PAG	G
Turbidity	0.18		NTU	0.10	SM2130B-2011			5/23/19 07:41	MBW	B

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363005** Date Collected: 5/22/2019 14:26 Matrix: Ground Water

Sample ID: **FFMP015W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0040	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Arsenic, Total	ND		mg/L	0.0059	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Barium, Total	0.047		mg/L	0.010	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Barium, Dissolved	0.045		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Beryllium, Total	ND	4	mg/L	0.0020	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Cadmium, Total	ND		mg/L	0.0020	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Calcium, Total	6.9		mg/L	0.20	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Calcium, Dissolved	6.6		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Chromium, Total	ND		mg/L	0.0040	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Cobalt, Total	ND		mg/L	0.010	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Copper, Total	ND		mg/L	0.010	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Iron, Total	ND		mg/L	0.10	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Lead, Total	ND		mg/L	0.0040	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Magnesium, Total	8.9		mg/L	0.20	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Magnesium, Dissolved	8.6		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Manganese, Total	0.036		mg/L	0.010	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Manganese, Dissolved	0.032		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 08:04	MNP	E
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:54	MSA	D
Nickel, Total	ND		mg/L	0.010	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Potassium, Total	1.7		mg/L	0.20	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Potassium, Dissolved	1.6		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Selenium, Total	ND		mg/L	0.010	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Silver, Total	ND		mg/L	0.0040	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Sodium, Total	18.8		mg/L	0.20	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Sodium, Dissolved	18.4		mg/L	0.11	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
Thallium, Total	ND		mg/L	0.0020	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Vanadium, Total	ND		mg/L	0.0040	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1
Zinc, Total	0.020	3	mg/L	0.010	SW846 6020A	5/25/19 13:35	AHI	5/31/19 11:00	MO	E1

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363005** Date Collected: 5/22/2019 14:26 Matrix: Ground Water

Sample ID: **FFMP015W** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.016		mg/L	0.0056	SW846 6020A	5/28/19 14:35	AHI	5/31/19 11:46	MO	D1
FIELD PARAMETERS										
Depth to Water Level	52.91		Feet		Field			5/22/19 14:26	BGS	F
Elev Top MW Casing above MSL	576.40		Feet		Field			5/22/19 14:26	BGS	F
Flow Rate	2.22		gal/min		Field			5/22/19 14:26	BGS	F
Ground Water Elevation	523.49		ft/MSL		Field			5/22/19 14:26	BGS	F
pH, Field (SM4500B)	4.97		pH_Units		Field			5/22/19 14:26	BGS	F
Sample Depth	135.00		Feet		Field			5/22/19 14:26	BGS	F
Specific Conductance, Field	255		umhos/cm	1	Field			5/22/19 14:26	BGS	F
Temperature	10.86		Deg. C		Field			5/22/19 14:26	BGS	F
Total Well Depth	149.90		Feet		Field			5/22/19 14:26	BGS	F
Volume in Water Column	142.58		Gallons		Field			5/22/19 14:26	BGS	F
Water Level After Purge	80.85		Feet		Field			5/22/19 14:26	BGS	F
Well Volumes Purged	1.00		Vol		Field			5/22/19 14:26	BGS	F

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363006** Date Collected: 5/22/2019 11:30 Matrix: Water

Sample ID: **FIELD BLANK** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/25/19 01:36	TMP	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/25/19 01:36	TMP	J
Benzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Bromoform	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/25/19 01:36	TMP	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Chloroform	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/25/19 01:36	TMP	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/25/19 01:36	TMP	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/25/19 01:36	TMP	J
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/25/19 01:36	TMP	J

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ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363006** Date Collected: 5/22/2019 11:30 Matrix: Water

Sample ID: **FIELD BLANK** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Styrene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Toluene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/25/19 01:36	TMP	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/25/19 01:36	TMP	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/25/19 01:36	TMP	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 01:36	TMP	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	109		%	62 - 133	SW846 8260B			5/25/19 01:36	TMP	J
4-Bromofluorobenzene (S)	105		%	79 - 114	SW846 8260B			5/25/19 01:36	TMP	J
Dibromofluoromethane (S)	104		%	78 - 116	SW846 8260B			5/25/19 01:36	TMP	J
Toluene-d8 (S)	101		%	76 - 127	SW846 8260B			5/25/19 01:36	TMP	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/25/19 01:36	CPK	J

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363007** Date Collected: 5/22/2019 15:39 Matrix: Water

Sample ID: **TRIP BLANK** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/25/19 01:13	TMP	A
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/25/19 01:13	TMP	A
Benzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Bromoform	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/25/19 01:13	TMP	A
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Chloroform	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/25/19 01:13	TMP	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/25/19 01:13	TMP	A
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/25/19 01:13	TMP	A
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/25/19 01:13	TMP	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035363007** Date Collected: 5/22/2019 15:39 Matrix: Water

Sample ID: **TRIP BLANK** Date Received: 5/22/2019 15:39

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Styrene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Toluene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/25/19 01:13	TMP	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/25/19 01:13	TMP	A
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/25/19 01:13	TMP	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/25/19 01:13	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	112		%	62 - 133	SW846 8260B			5/25/19 01:13	TMP	A
4-Bromofluorobenzene (S)	103		%	79 - 114	SW846 8260B			5/25/19 01:13	TMP	A
Dibromofluoromethane (S)	103		%	78 - 116	SW846 8260B			5/25/19 01:13	TMP	A
Toluene-d8 (S)	101		%	76 - 127	SW846 8260B			5/25/19 01:13	TMP	A
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/25/19 01:13	CPK	A

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3035363001	1	FFMP028W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035363001	2	FFMP028W	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.				
3035363001	3	FFMP028W	EPA 300.0	Nitrate-N
The sample was originally run within hold time, but required further analysis that exceeded hold time.				
3035363002	1	FFMP025W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035363002	2	FFMP025W	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.				
3035363003	1	FFMP02DW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035363003	2	FFMP02DW	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.				
3035363004	1	FFMP02SW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035363004	2	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.				
3035363005	1	FFMP015W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035363005	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.				
3035363005	3	FFMP015W	SW846 6020A	Zinc, Total
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MS may be due to sample matrix interference.				
3035363005	4	FFMP015W	SW846 6020A	Beryllium, Total
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MS may be due to sample matrix interference.				

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Analysis Method	Prep Method
3035363001	FFMP028W	D6919-09	
3035363001	FFMP028W	EPA 300.0	
3035363001	FFMP028W	EPA 410.4	
3035363001	FFMP028W	Field	
3035363001	FFMP028W	Lib Search VOC	
3035363001	FFMP028W	S2540C-11	
3035363001	FFMP028W	S4500HB-11	
3035363001	FFMP028W	SM2130B-2011	
3035363001	FFMP028W	SM2320B-2011	
3035363001	FFMP028W	SM2510B-2011	
3035363001	FFMP028W	SM5310B-2011	
3035363001	FFMP028W	SW846 6020A	SW846 3015
3035363001	FFMP028W	SW846 7470A	SW846 7470A
3035363001	FFMP028W	SW846 8260B	
3035363001	FFMP028W	SW846 9066	420.4/9066
3035363002	FFMP025W	D6919-09	
3035363002	FFMP025W	EPA 300.0	
3035363002	FFMP025W	EPA 410.4	
3035363002	FFMP025W	Field	
3035363002	FFMP025W	Lib Search VOC	
3035363002	FFMP025W	S2540C-11	
3035363002	FFMP025W	S4500HB-11	
3035363002	FFMP025W	SM2130B-2011	
3035363002	FFMP025W	SM2320B-2011	
3035363002	FFMP025W	SM2510B-2011	
3035363002	FFMP025W	SM5310B-2011	
3035363002	FFMP025W	SW846 6020A	SW846 3015
3035363002	FFMP025W	SW846 7470A	SW846 7470A
3035363002	FFMP025W	SW846 8260B	
3035363002	FFMP025W	SW846 9066	420.4/9066
3035363003	FFMP02DW	D6919-09	
3035363003	FFMP02DW	EPA 300.0	
3035363003	FFMP02DW	EPA 410.4	
3035363003	FFMP02DW	Field	
3035363003	FFMP02DW	Lib Search VOC	
3035363003	FFMP02DW	S2540C-11	
3035363003	FFMP02DW	S4500HB-11	
3035363003	FFMP02DW	SM2130B-2011	
3035363003	FFMP02DW	SM2320B-2011	
3035363003	FFMP02DW	SM2510B-2011	
3035363003	FFMP02DW	SM5310B-2011	
3035363003	FFMP02DW	SW846 6020A	SW846 3015
3035363003	FFMP02DW	SW846 7470A	SW846 7470A
3035363003	FFMP02DW	SW846 8260B	
3035363003	FFMP02DW	SW846 9066	420.4/9066
3035363004	FFMP02SW	D6919-09	

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3035363 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Analysis Method	Prep Method
3035363004	FFMP02SW	EPA 300.0	
3035363004	FFMP02SW	EPA 410.4	
3035363004	FFMP02SW	Field	
3035363004	FFMP02SW	Lib Search VOC	
3035363004	FFMP02SW	S2540C-11	
3035363004	FFMP02SW	S4500HB-11	
3035363004	FFMP02SW	SM2130B-2011	
3035363004	FFMP02SW	SM2320B-2011	
3035363004	FFMP02SW	SM2510B-2011	
3035363004	FFMP02SW	SM5310B-2011	
3035363004	FFMP02SW	SW846 6020A	SW846 3015
3035363004	FFMP02SW	SW846 7470A	SW846 7470A
3035363004	FFMP02SW	SW846 8260B	
3035363004	FFMP02SW	SW846 9066	420.4/9066
3035363005	FFMP015W	D6919-09	
3035363005	FFMP015W	EPA 300.0	
3035363005	FFMP015W	EPA 410.4	
3035363005	FFMP015W	Field	
3035363005	FFMP015W	Lib Search VOC	
3035363005	FFMP015W	S2540C-11	
3035363005	FFMP015W	S4500HB-11	
3035363005	FFMP015W	SM2130B-2011	
3035363005	FFMP015W	SM2320B-2011	
3035363005	FFMP015W	SM2510B-2011	
3035363005	FFMP015W	SM5310B-2011	
3035363005	FFMP015W	SW846 6020A	SW846 3015
3035363005	FFMP015W	SW846 7470A	SW846 7470A
3035363005	FFMP015W	SW846 8260B	
3035363005	FFMP015W	SW846 9066	420.4/9066
3035363006	FIELD BLANK	Lib Search VOC	
3035363006	FIELD BLANK	SW846 8260B	
3035363007	TRIP BLANK	Lib Search VOC	
3035363007	TRIP BLANK	SW846 8260B	

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

1 of 1

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: Mark Reider

Phone#: (717) 735-0193

Project Name/#: Frey Farm Form 19A

Bill To: Lancaster County Solid Waste MA

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

Date Required: _____ Approved By: _____

Email? [X] -Y mreider@LCSWMA.org

Fax? [X] -Y No.: (717) 397-9973

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

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	8260 VOCs - Form 19A + Subtitle D + TICs	pH, Cl, SpC, F, SO4, NO3, Tb, TDS	Alkalinity, HCO3	*FM	Sample Depth for AUX Data	NH3-N, COD	Diss Metals Form 19A (Field Filered)	Total Metals Form 19A + Subtitle D
					Enter Number of Containers Per Sample or Field Results Below.									
1. FFMP028W	05/22/19	1102	G	GW	2	1	2	1 2	1 2	X	X	1	1	1
2. FFMP025W	05/22/19	1135	G	GW	2	1	2	2	2	X	X	1	1	1
3. FFMP02DW	05/22/19	1250	G	GW	2	1	2	2	2	X	X	1	1	1
4. FFMP02SW	05/22/19	1308	G	GW	2	1	2	2	2	X	X	1	1	1
5. FFMP015W	05/22/19	1426	G	GW	2	1	2	1 2	1 2	X	X	1	1	1
6. Field Blank	05/22/19	1130	G	GW			2	CO						
7. Trip Blank	05/22/19	1539	G	GW			2	5/22/19						
8														
9														
10														

Cooler Temp: 5.6 Therm ID: 401 (Completed by Receiving Lab)

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

ALS Field Services: ☐Pickup ☐Labor ☐Composite_Sampling ☐Rental_Equipment ☐Other: _____

Project Comments:

LOGGED BY(signature): DATE TIME

REVIEWED BY(signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature] ALS	5/22/19	1539	2 [signature]	5/22/19	1539
3			4		
5			6		
7			8		
9			10		

Data Deliverables: ☐Standard ☐CLP-like ☐USACE ☐

Special Processing: USACE ☐ Navy ☐ ☐

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

Reportable to PADEP? Yes ☐ PWSID # _____

Sample Disposal: Lab ☒ Special ☐

EDDS: Format Type: _____

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

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

Condition of Sample Receipt Form

Client: LCSW MA Work Order #: 3035363 Initials: CD Date: 5/22/19

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?	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): 5.6 _____ _____ _____ _____ _____ _____ _____

Thermometer ID: 4P1 _____ _____ _____ _____ _____ _____ _____

Radiological (µCi): _____

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

Rev. 4/29/2019

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

July 10, 2019

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:	**3035930**
Purchase Order:	**PO1000126**	Workorder ID:	**2ND QTR 2019 FFMP-FORM 19A**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Friday, May 24, 2019.

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.

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

CC: Mr. Nicholas Rogers , 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.

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ALS Environmental

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SAMPLE SUMMARY

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3035930001	FFMP30RW	Ground Water	5/24/2019 09:29	5/24/2019 15:31	Mr. Brian G Shade
3035930002	FFMP04AW	Ground Water	5/24/2019 10:35	5/24/2019 15:31	Mr. Brian G Shade
3035930003	FIELD BLANK	Water	5/24/2019 13:30	5/24/2019 15:31	Mr. Brian G Shade
3035930004	TRIP BLANK	Water	5/24/2019 15:31	5/24/2019 15:31	Mr. Brian G Shade

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

SAMPLE SUMMARY

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

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 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.

Standard Acronyms/Flags

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

ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930001** Date Collected: 5/24/2019 09:29 Matrix: Ground Water

Sample ID: **FFMP30RW** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			6/1/19 02:07	PDK	L
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			6/1/19 02:07	PDK	L
Benzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Bromoform	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Bromomethane	ND	4	ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
2-Butanone	ND		ug/L	10.0	SW846 8260B			6/1/19 02:07	PDK	L
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Chloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Chloroform	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Chloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			6/1/19 02:07	PDK	L
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Dibromomethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			6/1/19 02:07	PDK	L
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
2-Hexanone	ND		ug/L	5.0	SW846 8260B			6/1/19 02:07	PDK	L
Iodomethane	ND	5	ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			6/1/19 02:07	PDK	L

ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930001** Date Collected: 5/24/2019 09:29 Matrix: Ground Water
Sample ID: **FFMP30RW** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Styrene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Toluene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Total Xylenes	ND		ug/L	3.0	SW846 8260B			6/1/19 02:07	PDK	L
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Trichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			6/1/19 02:07	PDK	L
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			6/1/19 02:07	PDK	L
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			6/1/19 02:07	PDK	L
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	62 - 133	SW846 8260B			6/1/19 02:07	PDK	L
4-Bromofluorobenzene (S)	111		%	79 - 114	SW846 8260B			6/1/19 02:07	PDK	L
Dibromofluoromethane (S)	111		%	78 - 116	SW846 8260B			6/1/19 02:07	PDK	L
Toluene-d8 (S)	116		%	76 - 127	SW846 8260B			6/1/19 02:07	PDK	L
Library Search - Volatiles										
Silanol, trimethyl-	6.2	J N	ug/L		SW846 8260B			6/1/19 02:07	PDK	L
WET CHEMISTRY										
Alkalinity, Bicarbonate	21		mg/L	5	SM2320B-2011			5/25/19 12:51	MBW	C
Alkalinity, Total	21	1	mg/L	5	SM2320B-2011			5/25/19 12:51	MBW	C
Ammonia-N	0.173		mg/L	0.100	D6919-09			5/31/19 10:53	AK	E
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/29/19 12:45	AK	E
Chloride	116		mg/L	2.0	EPA 300.0			5/25/19 05:32	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			5/25/19 05:32	CHW	C
Nitrate-N	5.0		mg/L	0.20	EPA 300.0			5/25/19 05:32	CHW	C
pH	6.09	2	pH_Units		S4500HB-11			5/25/19 12:51	MBW	C
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:29	C_D	5/30/19 05:54	C_D	K
Specific Conductance	467		umhos/cm	1	SM2510B-2011			5/25/19 12:51	MBW	C
Sulfate	13.1		mg/L	2.0	EPA 300.0			5/25/19 05:32	CHW	C
Total Dissolved Solids	394	6,7, 8	mg/L	5	S2540C-11			6/5/19 12:50	EXS	C
Total Organic Carbon (TOC)	0.90		mg/L	0.50	SM5310B-2011			5/28/19 23:41	PAG	I

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930001** Date Collected: 5/24/2019 09:29 Matrix: Ground Water

Sample ID: **FFMP30RW** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	0.39		NTU	0.10	SM2130B-2011			5/25/19 07:32	MBW	C
METALS										
Antimony, Total	ND		mg/L	0.0040	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Arsenic, Total	ND		mg/L	0.0059	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:42	LXC	G
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Barium, Total	0.069		mg/L	0.010	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Barium, Dissolved	0.063		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Beryllium, Total	ND		mg/L	0.0020	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Cadmium, Total	ND		mg/L	0.0020	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Calcium, Total	18.9		mg/L	0.20	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Calcium, Dissolved	17.3		mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Chromium, Total	ND		mg/L	0.0040	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Cobalt, Total	ND		mg/L	0.010	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Copper, Total	ND		mg/L	0.010	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Iron, Total	ND		mg/L	0.10	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:42	LXC	G
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Lead, Total	ND		mg/L	0.0040	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Magnesium, Total	14.4		mg/L	0.20	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Magnesium, Dissolved	15.2		mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/8/19 13:24	MO	F1
Manganese, Total	0.82		mg/L	0.010	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Manganese, Dissolved	0.74		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Mercury, Total	0.00066		mg/L	0.00050	SW846 7470A	5/30/19 03:29	MSA	5/30/19 09:11	MSA	G
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	6/3/19 08:55	MSA	6/3/19 14:17	MSA	F
Nickel, Total	0.012		mg/L	0.010	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Potassium, Total	2.3		mg/L	0.20	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Potassium, Dissolved	2.7		mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/8/19 13:24	MO	F1
Selenium, Total	ND		mg/L	0.010	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:42	LXC	G
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Silver, Total	ND		mg/L	0.0040	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
Sodium, Total	48.0		mg/L	0.20	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:42	LXC	G
Sodium, Dissolved	60.2		mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/8/19 13:24	MO	F1
Thallium, Total	ND		mg/L	0.0020	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Vanadium, Total	ND		mg/L	0.0040	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:42	LXC	G

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930001** Date Collected: 5/24/2019 09:29 Matrix: Ground Water

Sample ID: **FFMP30RW** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Total	0.013		mg/L	0.010	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:32	LXC	G
Zinc, Dissolved	0.010		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:52	MO	F1
FIELD PARAMETERS										
Depth to Water Level	30.53		Feet		Field			5/24/19 09:29	BGS	H
Elev Top MW Casing above MSL	562.30		Feet		Field			5/24/19 09:29	BGS	H
Flow Rate	2.14		gal/min		Field			5/24/19 09:29	BGS	H
Ground Water Elevation	531.77		ft/MSL		Field			5/24/19 09:29	BGS	H
pH, Field (SM4500B)	5.19		pH_Units		Field			5/24/19 09:29	BGS	H
Sample Depth	85.00		Feet		Field			5/24/19 09:29	BGS	H
Specific Conductance, Field	516		umhos/cm	1	Field			5/24/19 09:29	BGS	H
Temperature	10.90		Deg. C		Field			5/24/19 09:29	BGS	H
Total Well Depth	94.20		Feet		Field			5/24/19 09:29	BGS	H
Volume in Water Column	93.59		Gallons		Field			5/24/19 09:29	BGS	H
Water Level After Purge	34.11		Feet		Field			5/24/19 09:29	BGS	H
Well Volumes Purged	1.37		Vol		Field			5/24/19 09:29	BGS	H

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930002** Date Collected: 5/24/2019 10:35 Matrix: Ground Water

Sample ID: **FFMP04AW** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			6/1/19 02:30	PDK	L
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			6/1/19 02:30	PDK	L
Benzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Bromoform	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Bromomethane	ND	4	ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
2-Butanone	ND		ug/L	10.0	SW846 8260B			6/1/19 02:30	PDK	L
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Chloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Chloroform	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Chloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			6/1/19 02:30	PDK	L
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Dibromomethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			6/1/19 02:30	PDK	L
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
2-Hexanone	ND		ug/L	5.0	SW846 8260B			6/1/19 02:30	PDK	L
Iodomethane	ND	5	ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			6/1/19 02:30	PDK	L

ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930002** Date Collected: 5/24/2019 10:35 Matrix: Ground Water

Sample ID: **FFMP04AW** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Styrene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Toluene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Total Xylenes	ND		ug/L	3.0	SW846 8260B			6/1/19 02:30	PDK	L
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Trichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			6/1/19 02:30	PDK	L
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			6/1/19 02:30	PDK	L
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			6/1/19 02:30	PDK	L
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	117		%	62 - 133	SW846 8260B			6/1/19 02:30	PDK	L
4-Bromofluorobenzene (S)	110		%	79 - 114	SW846 8260B			6/1/19 02:30	PDK	L
Dibromofluoromethane (S)	110		%	78 - 116	SW846 8260B			6/1/19 02:30	PDK	L
Toluene-d8 (S)	113		%	76 - 127	SW846 8260B			6/1/19 02:30	PDK	L
Library Search - Volatiles										
Silanol, trimethyl-	2.0	J N	ug/L		SW846 8260B			6/1/19 02:30	PDK	L
WET CHEMISTRY										
Alkalinity, Bicarbonate	179		mg/L	5	SM2320B-2011			5/25/19 13:00	MBW	C
Alkalinity, Total	179	1	mg/L	5	SM2320B-2011			5/25/19 13:00	MBW	C
Ammonia-N	0.141		mg/L	0.100	D6919-09			5/31/19 05:23	AK	E
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/29/19 12:45	AK	E
Chloride	303		mg/L	5.0	EPA 300.0			5/30/19 11:38	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			5/25/19 05:44	CHW	C
Nitrate-N	0.30		mg/L	0.20	EPA 300.0			5/25/19 05:44	CHW	C
pH	7.68	2	pH_Units		S4500HB-11			5/25/19 13:00	MBW	C
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:29	C_D	5/30/19 05:54	C_D	K
Specific Conductance	1360		umhos/cm	1	SM2510B-2011			5/25/19 13:00	MBW	C
Sulfate	48.3		mg/L	2.0	EPA 300.0			5/25/19 05:44	CHW	C
Total Dissolved Solids	955	3	mg/L	5	S2540C-11			5/30/19 16:35	EXS	C
Total Organic Carbon (TOC)	1.1		mg/L	0.50	SM5310B-2011			5/28/19 23:41	PAG	I
Turbidity	0.49		NTU	0.10	SM2130B-2011			5/25/19 07:32	MBW	C

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ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930002** Date Collected: 5/24/2019 10:35 Matrix: Ground Water

Sample ID: **FFMP04AW** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:52	LXC	G
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Barium, Total	0.20		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Barium, Dissolved	0.18		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Calcium, Total	153		mg/L	0.11	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Calcium, Dissolved	138		mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Iron, Total	0.069		mg/L	0.056	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:52	LXC	G
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Magnesium, Total	28.2		mg/L	0.11	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Magnesium, Dissolved	25.1		mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/8/19 13:27	MO	F1
Manganese, Total	0.36		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Manganese, Dissolved	0.35		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	5/30/19 03:29	MSA	5/30/19 09:12	MSA	G
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	6/3/19 08:55	MSA	6/3/19 14:19	MSA	F
Nickel, Total	0.011		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Potassium, Total	2.2		mg/L	0.11	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Potassium, Dissolved	2.3		mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/8/19 13:27	MO	F1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:52	LXC	G
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
Sodium, Total	84.2		mg/L	0.11	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:52	LXC	G
Sodium, Dissolved	85.7		mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/8/19 13:27	MO	F1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:41	LXC	G
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:52	LXC	G
Zinc, Total	0.0075		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:52	LXC	G

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ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930002** Date Collected: 5/24/2019 10:35 Matrix: Ground Water

Sample ID: **FFMP04AW** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.011		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:56	MO	F1
FIELD PARAMETERS										
Depth to Water Level	31.28		Feet		Field			5/24/19 10:35	BGS	H
Elev Top MW Casing above MSL	560.72		Feet		Field			5/24/19 10:35	BGS	H
Flow Rate	2.06		gal/min		Field			5/24/19 10:35	BGS	H
Ground Water Elevation	529.44		ft/MSL		Field			5/24/19 10:35	BGS	H
pH, Field (SM4500B)	6.70		pH_Units		Field			5/24/19 10:35	BGS	H
Sample Depth	146.00		Feet		Field			5/24/19 10:35	BGS	H
Specific Conductance, Field	1448		umhos/cm	1	Field			5/24/19 10:35	BGS	H
Temperature	11.33		Deg. C		Field			5/24/19 10:35	BGS	H
Total Well Depth	148.50		Feet		Field			5/24/19 10:35	BGS	H
Volume in Water Column	172.31		Gallons		Field			5/24/19 10:35	BGS	H
Water Level After Purge	83.21		Feet		Field			5/24/19 10:35	BGS	H
Well Volumes Purged	0.72		Vol		Field			5/24/19 10:35	BGS	H

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930003** Date Collected: 5/24/2019 13:30 Matrix: Water

Sample ID: **FIELD BLANK** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			6/1/19 01:20	PDK	L
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			6/1/19 01:20	PDK	L
Benzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Bromoform	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Bromomethane	ND	6	ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
2-Butanone	ND		ug/L	10.0	SW846 8260B			6/1/19 01:20	PDK	L
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Chloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Chloroform	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Chloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			6/1/19 01:20	PDK	L
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Dibromomethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			6/1/19 01:20	PDK	L
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
2-Hexanone	ND		ug/L	5.0	SW846 8260B			6/1/19 01:20	PDK	L
Iodomethane	ND	7	ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			6/1/19 01:20	PDK	L

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ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930003** Date Collected: 5/24/2019 13:30 Matrix: Water

Sample ID: **FIELD BLANK** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Styrene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Toluene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Total Xylenes	ND		ug/L	3.0	SW846 8260B			6/1/19 01:20	PDK	L
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Trichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			6/1/19 01:20	PDK	L
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			6/1/19 01:20	PDK	L
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			6/1/19 01:20	PDK	L
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	113		%	62 - 133	SW846 8260B			6/1/19 01:20	PDK	L
4-Bromofluorobenzene (S)	114		%	79 - 114	SW846 8260B			6/1/19 01:20	PDK	L
Dibromofluoromethane (S)	109		%	78 - 116	SW846 8260B			6/1/19 01:20	PDK	L
Toluene-d8 (S)	117		%	76 - 127	SW846 8260B			6/1/19 01:20	PDK	L
Library Search - Volatiles										
Silanol, trimethyl-	2.3	J N	ug/L		SW846 8260B			6/1/19 01:20	PDK	L
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND		mg/L	5	SM2320B-2011			5/25/19 13:09	MBW	C
Alkalinity, Total	ND	1	mg/L	5	SM2320B-2011			5/25/19 13:09	MBW	C
Ammonia-N	ND		mg/L	0.100	D6919-09			5/31/19 06:04	AK	E
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/30/19 15:35	AK	E
Chloride	ND		mg/L	1.0	EPA 300.0			5/25/19 05:57	CHW	C
Fluoride	ND		mg/L	0.10	EPA 300.0			5/25/19 05:57	CHW	C
Nitrate-N	ND		mg/L	0.10	EPA 300.0			5/25/19 05:57	CHW	C
pH	6.52	2	pH_Units		S4500HB-11			5/25/19 13:09	MBW	C
Phenolics	ND		mg/L	0.005	SW846 9066	5/29/19 14:29	C_D	5/30/19 05:54	C_D	K
Specific Conductance	ND		umhos/cm	1	SM2510B-2011			5/25/19 13:09	MBW	C
Sulfate	ND		mg/L	1.0	EPA 300.0			5/25/19 05:57	CHW	C
Total Dissolved Solids	19	3	mg/L	5	S2540C-11			5/30/19 16:35	EXS	C
Total Organic Carbon (TOC)	ND		mg/L	0.50	SM5310B-2011			5/28/19 23:41	PAG	I
Turbidity	ND		NTU	0.10	SM2130B-2011			5/25/19 07:32	MBW	C

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ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930003** Date Collected: 5/24/2019 13:30 Matrix: Water

Sample ID: **FIELD BLANK** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Arsenic, Total	ND		mg/L	0.0033	SW846 6020A	5/31/19 12:20	AHI	7/9/19 11:15	MO	G
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Barium, Total	ND		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Barium, Dissolved	ND		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Calcium, Total	ND		mg/L	0.11	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Calcium, Dissolved	ND		mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Chromium, Dissolved	0.0023		mg/L	0.0022	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Iron, Total	ND		mg/L	0.056	SW846 6020A	5/31/19 12:20	AHI	7/9/19 11:15	MO	G
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Magnesium, Total	ND		mg/L	0.11	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Magnesium, Dissolved	ND	5	mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Manganese, Total	ND		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Manganese, Dissolved	ND		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	5/30/19 03:29	MSA	5/30/19 09:13	MSA	G
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	6/3/19 08:55	MSA	6/3/19 14:20	MSA	F
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Potassium, Total	ND		mg/L	0.11	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Potassium, Dissolved	ND	4	mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	7/9/19 11:15	MO	G
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1
Sodium, Total	0.15		mg/L	0.11	SW846 6020A	5/31/19 12:20	AHI	7/9/19 11:15	MO	G
Sodium, Dissolved	0.13		mg/L	0.11	SW846 6020A	6/3/19 10:50	AHI	7/8/19 13:52	MO	F1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/31/19 12:20	AHI	7/8/19 01:55	LXC	G
Zinc, Total	0.0089		mg/L	0.0056	SW846 6020A	5/31/19 12:20	AHI	6/28/19 06:44	LXC	G

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930003** Date Collected: 5/24/2019 13:30 Matrix: Water
Sample ID: **FIELD BLANK** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.0056		mg/L	0.0056	SW846 6020A	6/3/19 10:50	AHI	7/5/19 18:59	MO	F1

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930004** Date Collected: 5/24/2019 15:31 Matrix: Water

Sample ID: **TRIP BLANK** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			6/1/19 01:43	PDK	A
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			6/1/19 01:43	PDK	A
Benzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Bromoform	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Bromomethane	ND	1	ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
2-Butanone	ND		ug/L	10.0	SW846 8260B			6/1/19 01:43	PDK	A
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Chloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Chloroform	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Chloromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			6/1/19 01:43	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Dibromomethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			6/1/19 01:43	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
2-Hexanone	ND		ug/L	5.0	SW846 8260B			6/1/19 01:43	PDK	A
Iodomethane	ND	2	ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			6/1/19 01:43	PDK	A

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ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3035930004** Date Collected: 5/24/2019 15:31 Matrix: Water
Sample ID: **TRIP BLANK** Date Received: 5/24/2019 15:31

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Styrene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Toluene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			6/1/19 01:43	PDK	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			6/1/19 01:43	PDK	A
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			6/1/19 01:43	PDK	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			6/1/19 01:43	PDK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	62 - 133	SW846 8260B			6/1/19 01:43	PDK	A
4-Bromofluorobenzene (S)	110		%	79 - 114	SW846 8260B			6/1/19 01:43	PDK	A
Dibromofluoromethane (S)	113		%	78 - 116	SW846 8260B			6/1/19 01:43	PDK	A
Toluene-d8 (S)	115		%	76 - 127	SW846 8260B			6/1/19 01:43	PDK	A
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			6/1/19 01:43	CPK	A

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3035930001	1	FFMP30RW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035930001	2	FFMP30RW	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.				
3035930001	4	FFMP30RW	SW846 8260B	Bromomethane
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Bromomethane. The % Recovery was reported as 151 and the control limits were 45 to 148.				
3035930001	5	FFMP30RW	SW846 8260B	Iodomethane
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 145 and the control limits were 37 to 128.				
3035930001	6	FFMP30RW	S2540C-11	Total Dissolved Solids
The sample was originally run within hold time, but required further analysis that exceeded hold time.				
3035930001	7	FFMP30RW	S2540C-11	Total Dissolved Solids
The RPD associated with this sample was recovered at 12%. The RPD is outside method acceptance limits of 0-5%. The results used to calculate the RPD were 394 mg/L and 350 mg/L.				
3035930001	8	FFMP30RW	S2540C-11	Total Dissolved Solids
The method blank associated with this analyte had a result of 78 mg/L. Criteria states that the method blank should be less than 5 mg/L.				
3035930002	1	FFMP04AW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035930002	2	FFMP04AW	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.				
3035930002	3	FFMP04AW	S2540C-11	Total Dissolved Solids
The method blank associated with the sample was recovered at 5 mg/L. The method reporting limit for this analysis is <5 mg/L. A bias may exist with the result.				
3035930002	4	FFMP04AW	SW846 8260B	Bromomethane
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Bromomethane. The % Recovery was reported as 151 and the control limits were 45 to 148.				
3035930002	5	FFMP04AW	SW846 8260B	Iodomethane
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 145 and the control limits were 37 to 128.				
3035930003	1	FIELD BLANK	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3035930003	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.				
3035930003	3	FIELD BLANK	S2540C-11	Total Dissolved Solids
The method blank associated with the sample was recovered at 5 mg/L. The method reporting limit for this analysis is <5 mg/L. A bias may exist with the result.				
3035930003	4	FIELD BLANK	SW846 6020A	Potassium, Dissolved
The continuing calibration check (CCV) associated with this sample was outside of the required range, biased high for potassium. The potassium analyte concentration in the sample was less than the PQL. According to the method, the sample was commented and reported. LXC 7-8-19				

ANALYTICAL RESULTS

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

3035930003	5	FIELD BLANK	SW846 6020A	Magnesium, Dissolved

The continuing calibration check (CCV) associated with this sample was outside of the required range, biased high for magnesium. The magnesium analyte concentration in the sample was less than the PQL. According to the method, the sample was commented and reported. LXC 7-8-19

3035930003	6	FIELD BLANK	SW846 8260B	Bromomethane

The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Bromomethane. The % Recovery was reported as 151 and the control limits were 45 to 148.

3035930003	7	FIELD BLANK	SW846 8260B	Iodomethane

The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 145 and the control limits were 37 to 128.

3035930004	1	TRIP BLANK	SW846 8260B	Bromomethane

The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Bromomethane. The % Recovery was reported as 151 and the control limits were 45 to 148.

3035930004	2	TRIP BLANK	SW846 8260B	Iodomethane

The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 145 and the control limits were 37 to 128.

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3035930 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Analysis Method	Prep Method
3035930001	FFMP30RW	D6919-09	
3035930001	FFMP30RW	EPA 300.0	
3035930001	FFMP30RW	EPA 410.4	
3035930001	FFMP30RW	Field	
3035930001	FFMP30RW	Lib Search VOC	
3035930001	FFMP30RW	S2540C-11	
3035930001	FFMP30RW	S4500HB-11	
3035930001	FFMP30RW	SM2130B-2011	
3035930001	FFMP30RW	SM2320B-2011	
3035930001	FFMP30RW	SM2510B-2011	
3035930001	FFMP30RW	SM5310B-2011	
3035930001	FFMP30RW	SW846 6020A	SW846 3015
3035930001	FFMP30RW	SW846 7470A	SW846 7470A
3035930001	FFMP30RW	SW846 8260B	
3035930001	FFMP30RW	SW846 9066	420.4/9066
3035930002	FFMP04AW	D6919-09	
3035930002	FFMP04AW	EPA 300.0	
3035930002	FFMP04AW	EPA 410.4	
3035930002	FFMP04AW	Field	
3035930002	FFMP04AW	Lib Search VOC	
3035930002	FFMP04AW	S2540C-11	
3035930002	FFMP04AW	S4500HB-11	
3035930002	FFMP04AW	SM2130B-2011	
3035930002	FFMP04AW	SM2320B-2011	
3035930002	FFMP04AW	SM2510B-2011	
3035930002	FFMP04AW	SM5310B-2011	
3035930002	FFMP04AW	SW846 6020A	SW846 3015
3035930002	FFMP04AW	SW846 7470A	SW846 7470A
3035930002	FFMP04AW	SW846 8260B	
3035930002	FFMP04AW	SW846 9066	420.4/9066
3035930003	FIELD BLANK	D6919-09	
3035930003	FIELD BLANK	EPA 300.0	
3035930003	FIELD BLANK	EPA 410.4	
3035930003	FIELD BLANK	Lib Search VOC	
3035930003	FIELD BLANK	S2540C-11	
3035930003	FIELD BLANK	S4500HB-11	
3035930003	FIELD BLANK	SM2130B-2011	
3035930003	FIELD BLANK	SM2320B-2011	
3035930003	FIELD BLANK	SM2510B-2011	
3035930003	FIELD BLANK	SM5310B-2011	
3035930003	FIELD BLANK	SW846 6020A	SW846 3015
3035930003	FIELD BLANK	SW846 7470A	SW846 7470A
3035930003	FIELD BLANK	SW846 8260B	
3035930003	FIELD BLANK	SW846 9066	420.4/9066
3035930004	TRIP BLANK	Lib Search VOC	
3035930004	TRIP BLANK	SW846 8260B	

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

1 of 1

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: Mark Reider

Phone#: (717) 735-0193

Project Name/#: Frey Farm Form 19A

Bill To: Lancaster County Solid Waste MA

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

Date Required: _____ Approved By: _____

Email? [X] -Y mreider@LCSWMA.org

Fax? [X] -Y No.: (717) 397-9973

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

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	8260 VOCs - Form 19A + Subtitle D + TICs	pH, Cl, SpC, F, SO4, NO3, Tb, TDS	Alkalinity, HCO3	*FM	Sample Depth for AUX Data	NH3-N, COD	Diss Metals Form 19A (Field Filered)	Total Metals Form 19A + Subtitle D
			Enter Number of Containers Per Sample or Field Results Below.											
1. FFMP30RW	05/24/19	0929	G	GW	2	1	2	1	1	X	X	1	1	1
2. FFMP04AW	05/24/19	1035	G	GW	2	1	2	1	1	X	X	1	1	1
3. Field Blank	05/24/19	1330	G	GW	2	1	2	1	1			1	1	1
4. Trip Blank	05/24/19	[illegible]	G	GW			2		SUB/ADD 5/24/19					
6														
7														
8														
9														
10														

Cooler Temp: 5.1 Therm ID: 401

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

ALS Field Services: ☐Pickup ☐Labor ☐Composite_Sampling ☐Rental_Equipment ☐Other: _____

Project Comments:

LOGGED BY(signature): DATE TIME

REVIEWED BY(signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [illegible] ALS	5/24/19	1531	2 Corey Lynn ALS	5/24	1531
3			4		
5			6		
7			8		
9			10		

Data Deliverables: ☐Standard ☐CLP-like ☐USACE

Special Processing: USACE ☐ Navy ☐

Reportable to PADEP? Yes ☐ PWSID # _____

Sample Disposal: Lab [X] Special ☐

State Samples Collected In: ☐NY ☐NJ [X] PA ☐NC ☐

EDDS: Format Type- _____

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

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

Rev 8/04

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

Condition of Sample Receipt Form

Client:	Work Order #:	Initials:	Date:
LCSWA	3035930	CLS	5/24

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?	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): 5.1

Thermometer ID: 401

Radiological (µCi): _____

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

Rev. 4/29/2019

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June 29, 2019

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:	**3034898**
Purchase Order:	**PO1000126**	Workorder ID:	**2ND QTR 2019 FFMP-FORM 19A**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Monday, May 20, 2019.

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.

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

CC: Mr. Nicholas Rogers , 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.

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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

SAMPLE SUMMARY

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3034898001	FFMP017W	Ground Water	5/20/2019 09:56	5/20/2019 15:30	Mr. Brian G Shade
3034898002	FFMP018W	Ground Water	5/20/2019 10:26	5/20/2019 15:30	Mr. Brian G Shade
3034898003	FFMP019W	Ground Water	5/20/2019 11:12	5/20/2019 15:30	Mr. Brian G Shade
3034898004	FFMP029W	Ground Water	5/20/2019 12:05	5/20/2019 15:30	Mr. Brian G Shade
3034898005	FFMP005W	Ground Water	5/20/2019 13:19	5/20/2019 15:30	Mr. Brian G Shade
3034898006	FFMP26RW	Ground Water	5/20/2019 14:18	5/20/2019 15:30	Mr. Brian G Shade
3034898007	FIELD BLANK	Water	5/20/2019 13:40	5/20/2019 15:30	Mr. Brian G Shade
3034898008	TRIP BLANK	Water	5/20/2019 15:30	5/20/2019 15:30	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

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 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.

Standard Acronyms/Flags

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

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898001** Date Collected: 5/20/2019 09:56 Matrix: Ground Water

Sample ID: **FFMP017W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/22/19 01:53	PDK	L
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/22/19 01:53	PDK	L
Benzene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Bromoform	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/22/19 01:53	PDK	L
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Chloroform	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/22/19 01:53	PDK	L
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/22/19 01:53	PDK	L
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/22/19 01:53	PDK	L
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/22/19 01:53	PDK	L

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898001** Date Collected: 5/20/2019 09:56 Matrix: Ground Water
Sample ID: **FFMP017W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Styrene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Toluene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/22/19 01:53	PDK	L
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/22/19 01:53	PDK	L
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/22/19 01:53	PDK	L
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/22/19 01:53	PDK	L
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	105		%	62 - 133	SW846 8260B			5/22/19 01:53	PDK	L
4-Bromofluorobenzene (S)	108		%	79 - 114	SW846 8260B			5/22/19 01:53	PDK	L
Dibromofluoromethane (S)	94.9		%	78 - 116	SW846 8260B			5/22/19 01:53	PDK	L
Toluene-d8 (S)	91.2		%	76 - 127	SW846 8260B			5/22/19 01:53	PDK	L
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/22/19 01:53	JAH	L
WET CHEMISTRY										
Alkalinity, Bicarbonate	53		mg/L	5	SM2320B-2011			5/23/19 18:47	MLM	A
Alkalinity, Total	53	1	mg/L	5	SM2320B-2011			5/23/19 18:47	MLM	A
Ammonia-N	ND		mg/L	0.100	D6919-09			5/27/19 12:04	JAM	E
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/22/19 15:01	AK	E
Chloride	318		mg/L	5.0	EPA 300.0			5/23/19 05:40	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			5/21/19 06:01	CHW	C
Nitrate-N	1.8		mg/L	0.20	EPA 300.0			5/21/19 06:01	CHW	C
pH	6.43	2	pH_Units		S4500HB-11			5/23/19 18:47	MLM	A
Phenolics	ND		mg/L	0.005	SW846 9066	5/22/19 15:44	C_D	5/23/19 05:50	C_D	K
Specific Conductance	1140		umhos/cm	1	SM2510B-2011			5/23/19 18:47	MLM	A
Sulfate	54.2		mg/L	2.0	EPA 300.0			5/21/19 06:01	CHW	C
Total Dissolved Solids	729		mg/L	5	S2540C-11			5/23/19 15:50	EXS	C
Total Organic Carbon (TOC)	2.2		mg/L	0.50	SM5310B-2011			5/21/19 22:57	PAG	I
Turbidity	12.5		NTU	0.10	SM2130B-2011			5/21/19 05:54	MBW	C

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898001** Date Collected: 5/20/2019 09:56 Matrix: Ground Water
Sample ID: **FFMP017W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Arsenic, Total	ND	8	mg/L	0.0033	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/21/19 16:30	AHI	6/12/19 13:51	MO	F1
Barium, Total	0.15		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Barium, Dissolved	0.15		mg/L	0.0056	SW846 6020A	5/21/19 16:30	AHI	6/10/19 19:13	MO	F1
Beryllium, Total	ND	9	mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/21/19 16:30	AHI	6/10/19 19:13	MO	F1
Calcium, Total	84.4		mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Calcium, Dissolved	63.0		mg/L	0.11	SW846 6020A	5/21/19 16:30	AHI	6/18/19 12:16	MO	F1
Chromium, Total	0.0025		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/21/19 16:30	AHI	6/10/19 19:13	MO	F1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/21/19 16:30	AHI	6/10/19 19:13	MO	F1
Iron, Total	0.31		mg/L	0.056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/21/19 16:30	AHI	6/12/19 13:51	MO	F1
Lead, Total	0.0024		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/21/19 16:30	AHI	6/10/19 19:13	MO	F1
Magnesium, Total	35.9	3	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Magnesium, Dissolved	32.0		mg/L	0.11	SW846 6020A	5/21/19 16:30	AHI	6/18/19 12:16	MO	F1
Manganese, Total	0.53		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Manganese, Dissolved	0.45		mg/L	0.0056	SW846 6020A	5/21/19 16:30	AHI	6/10/19 19:13	MO	F1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 07:15	MSA	G
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:37	MSA	F
Nickel, Total	0.0079		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Potassium, Total	5.5	4,5	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Potassium, Dissolved	4.5		mg/L	0.11	SW846 6020A	5/21/19 16:30	AHI	6/18/19 12:16	MO	F1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/21/19 16:30	AHI	6/12/19 13:51	MO	F1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/21/19 16:30	AHI	6/10/19 19:13	MO	F1
Sodium, Total	71.9	6,7	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Sodium, Dissolved	65.6		mg/L	0.11	SW846 6020A	5/21/19 16:30	AHI	6/18/19 12:16	MO	F1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1
Zinc, Total	0.017		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:52	MNP	G1

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898001** Date Collected: 5/20/2019 09:56 Matrix: Ground Water

Sample ID: **FFMP017W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.0093		mg/L	0.0056	SW846 6020A	5/21/19 16:30	AHI	6/10/19 19:13	MO	F1
FIELD PARAMETERS										
Depth to Water Level	38.33		Feet		Field			5/20/19 09:56	BGS	H
Elev Top MW Casing above MSL	480.70		Feet		Field			5/20/19 09:56	BGS	H
Flow Rate	2.49		gal/min		Field			5/20/19 09:56	BGS	H
Ground Water Elevation	442.37		ft/MSL		Field			5/20/19 09:56	BGS	H
pH, Field (SM4500B)	5.97		pH_Units		Field			5/20/19 09:56	BGS	H
Sample Depth	135.00		Feet		Field			5/20/19 09:56	BGS	H
Specific Conductance, Field	1275		umhos/cm	1	Field			5/20/19 09:56	BGS	H
Temperature	10.42		Deg. C		Field			5/20/19 09:56	BGS	H
Total Well Depth	150.50		Feet		Field			5/20/19 09:56	BGS	H
Volume in Water Column	164.89		Gallons		Field			5/20/19 09:56	BGS	H
Water Level After Purge	44.12		Feet		Field			5/20/19 09:56	BGS	H
Well Volumes Purged	1.00		Vol		Field			5/20/19 09:56	BGS	H

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898002** Date Collected: 5/20/2019 10:26 Matrix: Ground Water

Sample ID: **FFMP018W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/22/19 02:16	PDK	L
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/22/19 02:16	PDK	L
Benzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Bromoform	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/22/19 02:16	PDK	L
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Chloroform	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/22/19 02:16	PDK	L
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/22/19 02:16	PDK	L
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/22/19 02:16	PDK	L
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/22/19 02:16	PDK	L

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898002** Date Collected: 5/20/2019 10:26 Matrix: Ground Water
Sample ID: **FFMP018W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Styrene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Toluene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/22/19 02:16	PDK	L
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/22/19 02:16	PDK	L
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/22/19 02:16	PDK	L
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/22/19 02:16	PDK	L
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	105		%	62 - 133	SW846 8260B			5/22/19 02:16	PDK	L
4-Bromofluorobenzene (S)	108		%	79 - 114	SW846 8260B			5/22/19 02:16	PDK	L
Dibromofluoromethane (S)	98.2		%	78 - 116	SW846 8260B			5/22/19 02:16	PDK	L
Toluene-d8 (S)	90.9		%	76 - 127	SW846 8260B			5/22/19 02:16	PDK	L
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/22/19 02:16	JAH	L
WET CHEMISTRY										
Alkalinity, Bicarbonate	24		mg/L	5	SM2320B-2011			5/23/19 20:12	MLM	A
Alkalinity, Total	24	1	mg/L	5	SM2320B-2011			5/23/19 20:12	MLM	A
Ammonia-N	ND		mg/L	0.100	D6919-09			5/27/19 12:18	JAM	E
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/22/19 15:01	AK	E
Chloride	104		mg/L	2.0	EPA 300.0			5/21/19 06:13	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			5/21/19 06:13	CHW	C
Nitrate-N	5.3		mg/L	0.20	EPA 300.0			5/21/19 06:13	CHW	C
pH	6.31	2	pH_Units		S4500HB-11			5/23/19 20:12	MLM	A
Phenolics	ND		mg/L	0.005	SW846 9066	5/22/19 15:44	C_D	5/23/19 05:50	C_D	K
Specific Conductance	509		umhos/cm	1	SM2510B-2011			5/23/19 20:12	MLM	A
Sulfate	44.8		mg/L	2.0	EPA 300.0			5/21/19 06:13	CHW	C
Total Dissolved Solids	323		mg/L	5	S2540C-11			5/23/19 15:50	EXS	C
Total Organic Carbon (TOC)	1.1		mg/L	0.50	SM5310B-2011			5/21/19 22:57	PAG	I
Turbidity	ND		NTU	0.10	SM2130B-2011			5/21/19 05:54	MBW	C

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898002** Date Collected: 5/20/2019 10:26 Matrix: Ground Water
Sample ID: **FFMP018W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Arsenic, Total	ND	17	mg/L	0.0033	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Arsenic, Dissolved	ND		mg/L	0.0054	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Barium, Total	0.068		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Barium, Dissolved	0.065		mg/L	0.010	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Beryllium, Total	ND	18	mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Calcium, Total	36.5		mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Calcium, Dissolved	27.9		mg/L	0.20	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Chromium, Dissolved	ND	4	mg/L	0.0040	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Cobalt, Total	0.0099		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Copper, Dissolved	ND	6	mg/L	0.010	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Iron, Total	ND		mg/L	0.056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Iron, Dissolved	ND		mg/L	0.10	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Lead, Dissolved	ND		mg/L	0.0040	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Magnesium, Total	16.4	12	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Magnesium, Dissolved	13.7	7	mg/L	0.20	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Manganese, Total	0.28		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Manganese, Dissolved	0.23	8	mg/L	0.010	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 07:16	MSA	G
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:41	MSA	F
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Potassium, Total	7.3	13,14	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Potassium, Dissolved	5.4		mg/L	0.20	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Selenium, Dissolved	ND	10	mg/L	0.010	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Silver, Dissolved	ND		mg/L	0.0040	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Sodium, Total	35.5	15,16	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Sodium, Dissolved	30.7		mg/L	0.20	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898002** Date Collected: 5/20/2019 10:26 Matrix: Ground Water

Sample ID: **FFMP018W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Total	0.010		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:56	MNP	G1
Zinc, Dissolved	0.012	11	mg/L	0.010	SW846 6020A	5/23/19 12:50	AHI	6/7/19 10:37	MO	F1
FIELD PARAMETERS										
Depth to Water Level	24.53		Feet		Field			5/20/19 10:26	BGS	H
Elev Top MW Casing above MSL	472.20		Feet		Field			5/20/19 10:26	BGS	H
Flow Rate	4.88		gal/min		Field			5/20/19 10:26	BGS	H
Ground Water Elevation	447.67		ft/MSL		Field			5/20/19 10:26	BGS	H
pH, Field (SM4500B)	5.42		pH_Units		Field			5/20/19 10:26	BGS	H
Sample Depth	40.00		Feet		Field			5/20/19 10:26	BGS	H
Specific Conductance, Field	540		umhos/cm	1	Field			5/20/19 10:26	BGS	H
Temperature	12.70		Deg. C		Field			5/20/19 10:26	BGS	H
Total Well Depth	51.46		Feet		Field			5/20/19 10:26	BGS	H
Volume in Water Column	17.50		Gallons		Field			5/20/19 10:26	BGS	H
Water Level After Purge	28.30		Feet		Field			5/20/19 10:26	BGS	H
Well Volumes Purged	1.11		Vol		Field			5/20/19 10:26	BGS	H

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898003** Date Collected: 5/20/2019 11:12 Matrix: Ground Water

Sample ID: **FFMP019W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/22/19 02:39	PDK	L
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/22/19 02:39	PDK	L
Benzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Bromoform	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/22/19 02:39	PDK	L
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Chloroform	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/22/19 02:39	PDK	L
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/22/19 02:39	PDK	L
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/22/19 02:39	PDK	L
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/22/19 02:39	PDK	L

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898003** Date Collected: 5/20/2019 11:12 Matrix: Ground Water
Sample ID: **FFMP019W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Styrene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Toluene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/22/19 02:39	PDK	L
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/22/19 02:39	PDK	L
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/22/19 02:39	PDK	L
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/22/19 02:39	PDK	L
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	104		%	62 - 133	SW846 8260B			5/22/19 02:39	PDK	L
4-Bromofluorobenzene (S)	108		%	79 - 114	SW846 8260B			5/22/19 02:39	PDK	L
Dibromofluoromethane (S)	95.7		%	78 - 116	SW846 8260B			5/22/19 02:39	PDK	L
Toluene-d8 (S)	91.6		%	76 - 127	SW846 8260B			5/22/19 02:39	PDK	L
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/22/19 02:39	JAH	L
WET CHEMISTRY										
Alkalinity, Bicarbonate	60		mg/L	5	SM2320B-2011			5/23/19 20:21	MLM	A
Alkalinity, Total	60	1	mg/L	5	SM2320B-2011			5/23/19 20:21	MLM	A
Ammonia-N	ND		mg/L	0.100	D6919-09			5/27/19 12:32	JAM	E
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/22/19 15:01	AK	E
Chloride	79.4		mg/L	2.0	EPA 300.0			5/21/19 06:25	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			5/21/19 06:25	CHW	C
Nitrate-N	0.34		mg/L	0.20	EPA 300.0			5/21/19 06:25	CHW	C
pH	7.17	2	pH_Units		S4500HB-11			5/23/19 20:21	MLM	A
Phenolics	ND		mg/L	0.005	SW846 9066	5/22/19 15:44	C_D	5/23/19 05:50	C_D	K
Specific Conductance	398		umhos/cm	1	SM2510B-2011			5/23/19 20:21	MLM	A
Sulfate	20.0		mg/L	2.0	EPA 300.0			5/21/19 06:25	CHW	C
Total Dissolved Solids	246		mg/L	5	S2540C-11			5/23/19 15:50	EXS	C
Total Organic Carbon (TOC)	1.2		mg/L	0.50	SM5310B-2011			5/22/19 03:04	PAG	I
Turbidity	ND		NTU	0.10	SM2130B-2011			5/21/19 05:54	MBW	C

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898003** Date Collected: 5/20/2019 11:12 Matrix: Ground Water

Sample ID: **FFMP019W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Arsenic, Total	ND	8	mg/L	0.0033	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Barium, Total	0.070		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Barium, Dissolved	0.073		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Beryllium, Total	ND	9	mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Calcium, Total	51.2		mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Calcium, Dissolved	44.1		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Iron, Total	ND		mg/L	0.056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Magnesium, Total	7.4	3	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Magnesium, Dissolved	5.0		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Manganese, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Manganese, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 07:17	MSA	G
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:42	MSA	F
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Potassium, Total	1.2	4,5	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Potassium, Dissolved	0.74		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Sodium, Total	12.7	6,7	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Sodium, Dissolved	8.9		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1
Zinc, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 12:59	MNP	G1

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898003** Date Collected: 5/20/2019 11:12 Matrix: Ground Water

Sample ID: **FFMP019W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:00	MO	F1
FIELD PARAMETERS										
Depth to Water Level	26.10		Feet		Field			5/20/19 11:20	BGS	H
Elev Top MW Casing above MSL	471.95		Feet		Field			5/20/19 11:20	BGS	H
Flow Rate	4.83		gal/min		Field			5/20/19 11:20	BGS	H
Ground Water Elevation	445.85		ft/MSL		Field			5/20/19 11:20	BGS	H
pH, Field (SM4500B)	6.27		pH_Units		Field			5/20/19 11:20	BGS	H
Sample Depth	49.00		Feet		Field			5/20/19 11:20	BGS	H
Specific Conductance, Field	440		umhos/cm	1	Field			5/20/19 11:20	BGS	H
Temperature	11.52		Deg. C		Field			5/20/19 11:20	BGS	H
Total Well Depth	132.79		Feet		Field			5/20/19 11:20	BGS	H
Volume in Water Column	69.35		Gallons		Field			5/20/19 11:20	BGS	H
Water Level After Purge	32.11		Feet		Field			5/20/19 11:20	BGS	H
Well Volumes Purged	0.98		Vol		Field			5/20/19 11:20	BGS	H

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898004** Date Collected: 5/20/2019 12:05 Matrix: Ground Water

Sample ID: **FFMP029W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/23/19 01:10	PDK	L
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/23/19 01:10	PDK	L
Benzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Bromoform	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/23/19 01:10	PDK	L
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Chloroform	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/23/19 01:10	PDK	L
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/23/19 01:10	PDK	L
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/23/19 01:10	PDK	L
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/23/19 01:10	PDK	L

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898004** Date Collected: 5/20/2019 12:05 Matrix: Ground Water
Sample ID: **FFMP029W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Styrene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Toluene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/23/19 01:10	PDK	L
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/23/19 01:10	PDK	L
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/23/19 01:10	PDK	L
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/23/19 01:10	PDK	L
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	112		%	62 - 133	SW846 8260B			5/23/19 01:10	PDK	L
4-Bromofluorobenzene (S)	103		%	79 - 114	SW846 8260B			5/23/19 01:10	PDK	L
Dibromofluoromethane (S)	102		%	78 - 116	SW846 8260B			5/23/19 01:10	PDK	L
Toluene-d8 (S)	102		%	76 - 127	SW846 8260B			5/23/19 01:10	PDK	L
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/23/19 01:10	CPK	L
WET CHEMISTRY										
Alkalinity, Bicarbonate	8		mg/L	5	SM2320B-2011			5/23/19 20:30	MLM	A
Alkalinity, Total	8	1	mg/L	5	SM2320B-2011			5/23/19 20:30	MLM	A
Ammonia-N	ND		mg/L	0.100	D6919-09			5/27/19 07:43	JAM	E
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/22/19 15:01	AK	E
Chloride	20.8		mg/L	2.0	EPA 300.0			5/21/19 06:36	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			5/21/19 06:36	CHW	C
Nitrate-N	3.7		mg/L	0.20	EPA 300.0			5/21/19 06:36	CHW	C
pH	6.18	2	pH_Units		S4500HB-11			5/23/19 20:30	MLM	A
Phenolics	ND		mg/L	0.005	SW846 9066	5/22/19 15:44	C_D	5/23/19 05:50	C_D	K
Specific Conductance	95		umhos/cm	1	SM2510B-2011			5/23/19 20:30	MLM	A
Sulfate	ND		mg/L	2.0	EPA 300.0			5/21/19 06:36	CHW	C
Total Dissolved Solids	116		mg/L	5	S2540C-11			5/23/19 15:50	EXS	C
Total Organic Carbon (TOC)	ND		mg/L	0.50	SM5310B-2011			5/22/19 03:04	PAG	I
Turbidity	2.27		NTU	0.10	SM2130B-2011			5/21/19 05:54	MBW	C

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898004** Date Collected: 5/20/2019 12:05 Matrix: Ground Water

Sample ID: **FFMP029W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Arsenic, Total	ND	8	mg/L	0.0033	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Barium, Total	0.033		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Barium, Dissolved	0.032		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Beryllium, Total	ND	9	mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Calcium, Total	3.6		mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Calcium, Dissolved	2.9		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Chromium, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Iron, Total	0.058		mg/L	0.056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Magnesium, Total	4.0	3	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Magnesium, Dissolved	3.5		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Manganese, Total	0.016		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Manganese, Dissolved	0.013		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 07:19	MSA	G
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:43	MSA	F
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Potassium, Total	1.2	4,5	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Potassium, Dissolved	1.0		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Selenium, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Sodium, Total	8.6	6,7	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Sodium, Dissolved	7.8		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Vanadium, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1
Zinc, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:12	MNP	G1

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898004** Date Collected: 5/20/2019 12:05 Matrix: Ground Water

Sample ID: **FFMP029W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:03	MO	F1
FIELD PARAMETERS										
Depth to Water Level	35.45		Feet		Field			5/20/19 12:05	BGS	H
Elev Top MW Casing above MSL	477.30		Feet		Field			5/20/19 12:05	BGS	H
Flow Rate	2.43		gal/min		Field			5/20/19 12:05	BGS	H
Ground Water Elevation	441.85		ft/MSL		Field			5/20/19 12:05	BGS	H
pH, Field (SM4500B)	4.88		pH_Units		Field			5/20/19 12:05	BGS	H
Sample Depth	55.00		Feet		Field			5/20/19 12:05	BGS	H
Specific Conductance, Field	116		umhos/cm	1	Field			5/20/19 12:05	BGS	H
Temperature	12.34		Deg. C		Field			5/20/19 12:05	BGS	H
Total Well Depth	60.50		Feet		Field			5/20/19 12:05	BGS	H
Volume in Water Column	36.82		Gallons		Field			5/20/19 12:05	BGS	H
Water Level After Purge	42.30		Feet		Field			5/20/19 12:05	BGS	H
Well Volumes Purged	2.64		Vol		Field			5/20/19 12:05	BGS	H

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898005** Date Collected: 5/20/2019 13:19 Matrix: Ground Water

Sample ID: **FFMP005W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/23/19 01:32	PDK	L
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/23/19 01:32	PDK	L
Benzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Bromoform	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/23/19 01:32	PDK	L
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Chloroform	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/23/19 01:32	PDK	L
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/23/19 01:32	PDK	L
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/23/19 01:32	PDK	L
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/23/19 01:32	PDK	L

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898005** Date Collected: 5/20/2019 13:19 Matrix: Ground Water
Sample ID: **FFMP005W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Styrene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Toluene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/23/19 01:32	PDK	L
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/23/19 01:32	PDK	L
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/23/19 01:32	PDK	L
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/23/19 01:32	PDK	L
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	112		%	62 - 133	SW846 8260B			5/23/19 01:32	PDK	L
4-Bromofluorobenzene (S)	104		%	79 - 114	SW846 8260B			5/23/19 01:32	PDK	L
Dibromofluoromethane (S)	102		%	78 - 116	SW846 8260B			5/23/19 01:32	PDK	L
Toluene-d8 (S)	102		%	76 - 127	SW846 8260B			5/23/19 01:32	PDK	L
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/23/19 01:32	CPK	L
WET CHEMISTRY										
Alkalinity, Bicarbonate	42		mg/L	5	SM2320B-2011			5/29/19 14:02	MLM	B
Alkalinity, Total	42	1	mg/L	5	SM2320B-2011			5/29/19 14:02	MLM	B
Ammonia-N	0.177		mg/L	0.100	D6919-09			5/27/19 07:57	JAM	E
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/22/19 15:01	AK	E
Chloride	244		mg/L	10.0	EPA 300.0			5/23/19 05:52	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			5/21/19 07:47	CHW	C
Nitrate-N	2.7		mg/L	0.20	EPA 300.0			5/21/19 07:47	CHW	C
pH	6.32	2	pH_Units		S4500HB-11			5/29/19 14:02	MLM	B
Phenolics	ND		mg/L	0.005	SW846 9066	5/22/19 15:44	C_D	5/23/19 05:50	C_D	K
Specific Conductance	975		umhos/cm	1	SM2510B-2011			5/29/19 14:02	MLM	B
Sulfate	76.2		mg/L	2.0	EPA 300.0			5/21/19 07:47	CHW	C
Total Dissolved Solids	597		mg/L	5	S2540C-11			5/23/19 15:50	EXS	C
Total Organic Carbon (TOC)	1.8		mg/L	0.50	SM5310B-2011			5/22/19 03:04	PAG	I
Turbidity	0.20		NTU	0.10	SM2130B-2011			5/21/19 05:54	MBW	C

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898005** Date Collected: 5/20/2019 13:19 Matrix: Ground Water
Sample ID: **FFMP005W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Arsenic, Total	ND	8	mg/L	0.0033	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Barium, Total	0.054		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Barium, Dissolved	0.056		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Calcium, Total	78.6	3	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Calcium, Dissolved	64.6		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Chromium, Total	ND	9	mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Cobalt, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Iron, Total	ND	4	mg/L	0.056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Magnesium, Total	26.0		mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Magnesium, Dissolved	20.9		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Manganese, Total	0.12	5	mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Manganese, Dissolved	0.093		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 07:20	MSA	G
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:47	MSA	F
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Potassium, Total	4.4	6	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Potassium, Dissolved	3.1		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Selenium, Total	ND	10	mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Sodium, Total	68.8	7	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Sodium, Dissolved	55.2		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Vanadium, Total	ND	11	mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1
Zinc, Total	0.0093		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:15	MNP	G1

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898005** Date Collected: 5/20/2019 13:19 Matrix: Ground Water
Sample ID: **FFMP005W** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.0069		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:28	MO	F1
FIELD PARAMETERS										
Depth to Water Level	56.26		Feet		Field			5/20/19 13:19	BGS	H
Elev Top MW Casing above MSL	537.40		Feet		Field			5/20/19 13:19	BGS	H
Flow Rate	2.53		gal/min		Field			5/20/19 13:19	BGS	H
Ground Water Elevation	481.14		ft/MSL		Field			5/20/19 13:19	BGS	H
pH, Field (SM4500B)	5.64		pH_Units		Field			5/20/19 13:19	BGS	H
Sample Depth	135.00		Feet		Field			5/20/19 13:19	BGS	H
Specific Conductance, Field	1052		umhos/cm	1	Field			5/20/19 13:19	BGS	H
Temperature	10.97		Deg. C		Field			5/20/19 13:19	BGS	H
Total Well Depth	149.70		Feet		Field			5/20/19 13:19	BGS	H
Volume in Water Column	137.36		Gallons		Field			5/20/19 13:19	BGS	H
Water Level After Purge	84.10		Feet		Field			5/20/19 13:19	BGS	H
Well Volumes Purged	1.29		Vol		Field			5/20/19 13:19	BGS	H

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Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898006** Date Collected: 5/20/2019 14:18 Matrix: Ground Water

Sample ID: **FFMP26RW** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/23/19 01:55	PDK	L
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/23/19 01:55	PDK	L
Benzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Bromoform	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/23/19 01:55	PDK	L
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Chloroform	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/23/19 01:55	PDK	L
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/23/19 01:55	PDK	L
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/23/19 01:55	PDK	L
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/23/19 01:55	PDK	L

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898006** Date Collected: 5/20/2019 14:18 Matrix: Ground Water

Sample ID: **FFMP26RW** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Styrene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Toluene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/23/19 01:55	PDK	L
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/23/19 01:55	PDK	L
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/23/19 01:55	PDK	L
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/23/19 01:55	PDK	L
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	111		%	62 - 133	SW846 8260B			5/23/19 01:55	PDK	L
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260B			5/23/19 01:55	PDK	L
Dibromofluoromethane (S)	102		%	78 - 116	SW846 8260B			5/23/19 01:55	PDK	L
Toluene-d8 (S)	101		%	76 - 127	SW846 8260B			5/23/19 01:55	PDK	L
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/23/19 01:55	CPK	L
WET CHEMISTRY										
Alkalinity, Bicarbonate	47		mg/L	5	SM2320B-2011			5/29/19 14:10	MLM	B
Alkalinity, Total	47	1	mg/L	5	SM2320B-2011			5/29/19 14:10	MLM	B
Ammonia-N	ND		mg/L	0.100	D6919-09			5/27/19 08:11	JAM	E
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			5/22/19 15:01	AK	E
Chloride	187		mg/L	2.0	EPA 300.0			5/21/19 07:59	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			5/21/19 07:59	CHW	C
Nitrate-N	1.5		mg/L	0.20	EPA 300.0			5/21/19 07:59	CHW	C
pH	6.15	2	pH_Units		S4500HB-11			5/29/19 14:10	MLM	B
Phenolics	ND		mg/L	0.005	SW846 9066	5/22/19 15:44	C_D	5/23/19 05:50	C_D	K
Specific Conductance	843		umhos/cm	1	SM2510B-2011			5/29/19 14:10	MLM	B
Sulfate	94.4		mg/L	2.0	EPA 300.0			5/21/19 07:59	CHW	C
Total Dissolved Solids	550		mg/L	5	S2540C-11			5/23/19 15:50	EXS	C
Total Organic Carbon (TOC)	2.0		mg/L	0.50	SM5310B-2011			5/22/19 03:04	PAG	I
Turbidity	0.56		NTU	0.10	SM2130B-2011			5/21/19 05:54	MBW	C

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898006** Date Collected: 5/20/2019 14:18 Matrix: Ground Water

Sample ID: **FFMP26RW** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
METALS										
Antimony, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Arsenic, Total	ND	8	mg/L	0.0033	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Arsenic, Dissolved	ND		mg/L	0.0030	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Barium, Total	0.093		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Barium, Dissolved	0.095		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Beryllium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Cadmium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Cadmium, Dissolved	ND		mg/L	0.0011	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Calcium, Total	66.5	3	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Calcium, Dissolved	55.1		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Chromium, Total	ND	9	mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Chromium, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Cobalt, Total	0.027		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Copper, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Copper, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Iron, Total	ND	4	mg/L	0.056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Iron, Dissolved	ND		mg/L	0.056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Lead, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Lead, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Magnesium, Total	20.0		mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Magnesium, Dissolved	14.6		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Manganese, Total	0.77	5	mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Manganese, Dissolved	0.64		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Mercury, Total	ND		mg/L	0.0025	SW846 7470A	5/27/19 02:54	MSA	5/27/19 07:21	MSA	G
Mercury, Dissolved	ND		mg/L	0.0025	SW846 7470A	5/27/19 00:36	MSA	5/27/19 03:48	MSA	F
Nickel, Total	ND		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Potassium, Total	12.9	6	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Potassium, Dissolved	8.7		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Selenium, Total	ND	10	mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Selenium, Dissolved	ND		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Silver, Total	ND		mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Silver, Dissolved	ND		mg/L	0.0022	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Sodium, Total	70.9	7	mg/L	0.11	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Sodium, Dissolved	53.5		mg/L	0.11	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
Thallium, Total	ND		mg/L	0.0011	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Vanadium, Total	ND	11	mg/L	0.0022	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1
Zinc, Total	0.014		mg/L	0.0056	SW846 6020A	5/22/19 12:20	AHI	6/28/19 13:19	MNP	G1

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898006** Date Collected: 5/20/2019 14:18 Matrix: Ground Water
Sample ID: **FFMP26RW** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Zinc, Dissolved	0.011		mg/L	0.0056	SW846 6020A	5/23/19 12:50	AHI	6/7/19 11:31	MO	F1
FIELD PARAMETERS										
Depth to Water Level	66.90		Feet		Field			5/20/19 14:18	BGS	H
Elev Top MW Casing above MSL	547.40		Feet		Field			5/20/19 14:18	BGS	H
Flow Rate	2.60		gal/min		Field			5/20/19 14:18	BGS	H
Ground Water Elevation	480.50		ft/MSL		Field			5/20/19 14:18	BGS	H
pH, Field (SM4500B)	5.50		pH_Units		Field			5/20/19 14:18	BGS	H
Sample Depth	105.00		Feet		Field			5/20/19 14:18	BGS	H
Specific Conductance, Field	911		umhos/cm	1	Field			5/20/19 14:18	BGS	H
Temperature	11.86		Deg. C		Field			5/20/19 14:18	BGS	H
Total Well Depth	118.30		Feet		Field			5/20/19 14:18	BGS	H
Volume in Water Column	75.56		Gallons		Field			5/20/19 14:18	BGS	H
Water Level After Purge	82.48		Feet		Field			5/20/19 14:18	BGS	H
Well Volumes Purged	2.07		Vol		Field			5/20/19 14:18	BGS	H

Susan J. Scherer
Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898007** Date Collected: 5/20/2019 13:40 Matrix: Water

Sample ID: **FIELD BLANK** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/22/19 23:39	PDK	A
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/22/19 23:39	PDK	A
Benzene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Bromoform	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/22/19 23:39	PDK	A
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Chloroform	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/22/19 23:39	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/22/19 23:39	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/22/19 23:39	PDK	A
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/22/19 23:39	PDK	A

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ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898007** Date Collected: 5/20/2019 13:40 Matrix: Water

Sample ID: **FIELD BLANK** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Styrene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Toluene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/22/19 23:39	PDK	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/22/19 23:39	PDK	A
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/22/19 23:39	PDK	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/22/19 23:39	PDK	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	109		%	62 - 133	SW846 8260B			5/22/19 23:39	PDK	A
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260B			5/22/19 23:39	PDK	A
Dibromofluoromethane (S)	101		%	78 - 116	SW846 8260B			5/22/19 23:39	PDK	A
Toluene-d8 (S)	101		%	76 - 127	SW846 8260B			5/22/19 23:39	PDK	A

LIBRARY SEARCH - VOLATILES

No TIC's Detected	.				Lib Search VOC			5/22/19 23:39	CPK	A

Ms. Susan J Scherer
Project Coordinator

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

ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898008** Date Collected: 5/20/2019 15:30 Matrix: Water

Sample ID: **TRIP BLANK** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
VOLATILE ORGANICS										
Acetone	ND		ug/L	10.0	SW846 8260B			5/23/19 00:02	PDK	A
Acrylonitrile	ND		ug/L	5.0	SW846 8260B			5/23/19 00:02	PDK	A
Benzene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Bromochloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Bromoform	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Bromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
2-Butanone	ND		ug/L	10.0	SW846 8260B			5/23/19 00:02	PDK	A
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Chlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Chloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Chloroform	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Chloromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B			5/23/19 00:02	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Dibromomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B			5/23/19 00:02	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
2-Hexanone	ND		ug/L	5.0	SW846 8260B			5/23/19 00:02	PDK	A
Iodomethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B			5/23/19 00:02	PDK	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID: **3034898008** Date Collected: 5/20/2019 15:30 Matrix: Water

Sample ID: **TRIP BLANK** Date Received: 5/20/2019 15:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Styrene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Toluene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			5/23/19 00:02	PDK	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			5/23/19 00:02	PDK	A
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			5/23/19 00:02	PDK	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			5/23/19 00:02	PDK	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	111		%	62 - 133	SW846 8260B			5/23/19 00:02	PDK	A
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260B			5/23/19 00:02	PDK	A
Dibromofluoromethane (S)	101		%	78 - 116	SW846 8260B			5/23/19 00:02	PDK	A
Toluene-d8 (S)	103		%	76 - 127	SW846 8260B			5/23/19 00:02	PDK	A
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			5/23/19 00:02	CPK	A

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3034898001	1	FFMP017W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3034898001	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.				
3034898001	3	FFMP017W	SW846 6020A	Magnesium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898001	4	FFMP017W	SW846 6020A	Potassium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898001	5	FFMP017W	SW846 6020A	Potassium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898001	6	FFMP017W	SW846 6020A	Sodium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898001	7	FFMP017W	SW846 6020A	Sodium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898001	8	FFMP017W	SW846 6020A	Arsenic, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898001	9	FFMP017W	SW846 6020A	Beryllium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898002	1	FFMP018W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3034898002	2	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.				
3034898002	4	FFMP018W	SW846 6020A	Chromium, Dissolved
One of the two matrix spike analyses performed on this sample failed to meet acceptable recovery limits. The other matrix spike was within acceptable recovery limits. Matrix interferences are the possible cause for the failure.				
3034898002	6	FFMP018W	SW846 6020A	Copper, Dissolved
One of the two matrix spike analyses performed on this sample failed to meet acceptable recovery limits. The other matrix spike was within acceptable recovery limits. Matrix interferences are the possible cause for the failure.				
3034898002	7	FFMP018W	SW846 6020A	Magnesium, Dissolved
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MS may be due to sample matrix interference.				
3034898002	8	FFMP018W	SW846 6020A	Manganese, Dissolved
One of the two matrix spike analyses performed on this sample failed to meet acceptable recovery limits. The other matrix spike was within acceptable recovery limits. Matrix interferences are the possible cause for the failure.				
3034898002	10	FFMP018W	SW846 6020A	Selenium, Dissolved
One of the two matrix spike analyses performed on this sample failed to meet acceptable recovery limits. The other matrix spike was within acceptable recovery limits. Matrix interferences are the possible cause for the failure.				

ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

3034898002	11	FFMP018W	SW846 6020A	Zinc, Dissolved
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MS may be due to sample matrix interference.				
3034898002	12	FFMP018W	SW846 6020A	Magnesium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898002	13	FFMP018W	SW846 6020A	Potassium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898002	14	FFMP018W	SW846 6020A	Potassium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898002	15	FFMP018W	SW846 6020A	Sodium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898002	16	FFMP018W	SW846 6020A	Sodium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898002	17	FFMP018W	SW846 6020A	Arsenic, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898002	18	FFMP018W	SW846 6020A	Beryllium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898003	1	FFMP019W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3034898003	2	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.				
3034898003	3	FFMP019W	SW846 6020A	Magnesium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898003	4	FFMP019W	SW846 6020A	Potassium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898003	5	FFMP019W	SW846 6020A	Potassium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898003	6	FFMP019W	SW846 6020A	Sodium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898003	7	FFMP019W	SW846 6020A	Sodium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898003	8	FFMP019W	SW846 6020A	Arsenic, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898003	9	FFMP019W	SW846 6020A	Beryllium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898004	1	FFMP029W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

3034898004	2	FFMP029W	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.				
3034898004	3	FFMP029W	SW846 6020A	Magnesium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898004	4	FFMP029W	SW846 6020A	Potassium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898004	5	FFMP029W	SW846 6020A	Potassium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898004	6	FFMP029W	SW846 6020A	Sodium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898004	7	FFMP029W	SW846 6020A	Sodium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898004	8	FFMP029W	SW846 6020A	Arsenic, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898004	9	FFMP029W	SW846 6020A	Beryllium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898005	1	FFMP005W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3034898005	2	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.				
3034898005	3	FFMP005W	SW846 6020A	Calcium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898005	4	FFMP005W	SW846 6020A	Iron, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898005	5	FFMP005W	SW846 6020A	Manganese, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898005	6	FFMP005W	SW846 6020A	Potassium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898005	7	FFMP005W	SW846 6020A	Sodium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898005	8	FFMP005W	SW846 6020A	Arsenic, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898005	9	FFMP005W	SW846 6020A	Chromium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898005	10	FFMP005W	SW846 6020A	Selenium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				

ANALYTICAL RESULTS

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

3034898005	11	FFMP005W	SW846 6020A	Vanadium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898006	1	FFMP26RW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3034898006	2	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.				
3034898006	3	FFMP26RW	SW846 6020A	Calcium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898006	4	FFMP26RW	SW846 6020A	Iron, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898006	5	FFMP26RW	SW846 6020A	Manganese, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898006	6	FFMP26RW	SW846 6020A	Potassium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898006	7	FFMP26RW	SW846 6020A	Sodium, Total
The recovery of the Low Level Continuing Calibration Verification (LLCCV) associated to this analyte was outside of the established control limits.				
3034898006	8	FFMP26RW	SW846 6020A	Arsenic, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898006	9	FFMP26RW	SW846 6020A	Chromium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898006	10	FFMP26RW	SW846 6020A	Selenium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				
3034898006	11	FFMP26RW	SW846 6020A	Vanadium, Total
The recovery of the Continuing Calibration Verification (CCV) associated to this analyte was outside of the established control limits.				

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Analysis Method	Prep Method
3034898001	FFMP017W	D6919-09	
3034898001	FFMP017W	EPA 300.0	
3034898001	FFMP017W	EPA 410.4	
3034898001	FFMP017W	Field	
3034898001	FFMP017W	Lib Search VOC	
3034898001	FFMP017W	S2540C-11	
3034898001	FFMP017W	S4500HB-11	
3034898001	FFMP017W	SM2130B-2011	
3034898001	FFMP017W	SM2320B-2011	
3034898001	FFMP017W	SM2510B-2011	
3034898001	FFMP017W	SM5310B-2011	
3034898001	FFMP017W	SW846 6020A	SW846 3015
3034898001	FFMP017W	SW846 7470A	SW846 7470A
3034898001	FFMP017W	SW846 8260B	
3034898001	FFMP017W	SW846 9066	420.4/9066
3034898002	FFMP018W	D6919-09	
3034898002	FFMP018W	EPA 300.0	
3034898002	FFMP018W	EPA 410.4	
3034898002	FFMP018W	Field	
3034898002	FFMP018W	Lib Search VOC	
3034898002	FFMP018W	S2540C-11	
3034898002	FFMP018W	S4500HB-11	
3034898002	FFMP018W	SM2130B-2011	
3034898002	FFMP018W	SM2320B-2011	
3034898002	FFMP018W	SM2510B-2011	
3034898002	FFMP018W	SM5310B-2011	
3034898002	FFMP018W	SW846 6020A	SW846 3015
3034898002	FFMP018W	SW846 7470A	SW846 7470A
3034898002	FFMP018W	SW846 8260B	
3034898002	FFMP018W	SW846 9066	420.4/9066
3034898003	FFMP019W	D6919-09	
3034898003	FFMP019W	EPA 300.0	
3034898003	FFMP019W	EPA 410.4	
3034898003	FFMP019W	Field	
3034898003	FFMP019W	Lib Search VOC	
3034898003	FFMP019W	S2540C-11	
3034898003	FFMP019W	S4500HB-11	
3034898003	FFMP019W	SM2130B-2011	
3034898003	FFMP019W	SM2320B-2011	
3034898003	FFMP019W	SM2510B-2011	
3034898003	FFMP019W	SM5310B-2011	
3034898003	FFMP019W	SW846 6020A	SW846 3015
3034898003	FFMP019W	SW846 7470A	SW846 7470A
3034898003	FFMP019W	SW846 8260B	
3034898003	FFMP019W	SW846 9066	420.4/9066
3034898004	FFMP029W	D6919-09	

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Analysis Method	Prep Method
3034898004	FFMP029W	EPA 300.0	
3034898004	FFMP029W	EPA 410.4	
3034898004	FFMP029W	Field	
3034898004	FFMP029W	Lib Search VOC	
3034898004	FFMP029W	S2540C-11	
3034898004	FFMP029W	S4500HB-11	
3034898004	FFMP029W	SM2130B-2011	
3034898004	FFMP029W	SM2320B-2011	
3034898004	FFMP029W	SM2510B-2011	
3034898004	FFMP029W	SM5310B-2011	
3034898004	FFMP029W	SW846 6020A	SW846 3015
3034898004	FFMP029W	SW846 7470A	SW846 7470A
3034898004	FFMP029W	SW846 8260B	
3034898004	FFMP029W	SW846 9066	420.4/9066
3034898005	FFMP005W	D6919-09	
3034898005	FFMP005W	EPA 300.0	
3034898005	FFMP005W	EPA 410.4	
3034898005	FFMP005W	Field	
3034898005	FFMP005W	Lib Search VOC	
3034898005	FFMP005W	S2540C-11	
3034898005	FFMP005W	S4500HB-11	
3034898005	FFMP005W	SM2130B-2011	
3034898005	FFMP005W	SM2320B-2011	
3034898005	FFMP005W	SM2510B-2011	
3034898005	FFMP005W	SM5310B-2011	
3034898005	FFMP005W	SW846 6020A	SW846 3015
3034898005	FFMP005W	SW846 7470A	SW846 7470A
3034898005	FFMP005W	SW846 8260B	
3034898005	FFMP005W	SW846 9066	420.4/9066
3034898006	FFMP26RW	D6919-09	
3034898006	FFMP26RW	EPA 300.0	
3034898006	FFMP26RW	EPA 410.4	
3034898006	FFMP26RW	Field	
3034898006	FFMP26RW	Lib Search VOC	
3034898006	FFMP26RW	S2540C-11	
3034898006	FFMP26RW	S4500HB-11	
3034898006	FFMP26RW	SM2130B-2011	
3034898006	FFMP26RW	SM2320B-2011	
3034898006	FFMP26RW	SM2510B-2011	
3034898006	FFMP26RW	SM5310B-2011	
3034898006	FFMP26RW	SW846 6020A	SW846 3015
3034898006	FFMP26RW	SW846 7470A	SW846 7470A
3034898006	FFMP26RW	SW846 8260B	
3034898006	FFMP26RW	SW846 9066	420.4/9066
3034898007	FIELD BLANK	Lib Search VOC	
3034898007	FIELD BLANK	SW846 8260B	

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

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3034898 2ND QTR 2019 FFMP-FORM 19A

Lab ID	Sample ID	Analysis Method	Prep Method
3034898008	TRIP BLANK	Lib Search VOC	
3034898008	TRIP BLANK	SW846 8260B	

ALS Environmental

34 Dogwood Lane • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

30348988

1 of 1

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: Mark Reider

Phone#: (717) 735-0193

Project Name/#: Frey Farm Form 19A

Bill To: Lancaster County Solid Waste MA

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

Date Required: _____ Approved By: _____

Email? [X] -Y mreider@LCSWMA.org

Fax? [X] -Y No.: (717) 397-9973

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

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	8260 VOCs - Form 19A + SubVille D + TICs	pH, Cl, SpC, F, SO4, NO3, Tb, TDS	Alkalinity, HCO3	*FM	Sample Depth for AUX Data	NH3-N, COD	Diss Metals Form 19A (Field Filered)	Total Metals Form 19A + Subtille D
			Enter Number of Containers Per Sample or Field Results Below.											
1. FFMP017W	05/20/19	0956	G	GW	2	1	2	2	2	X	X	1	1	1
2. FFMP018W	05/20/19	1026	G	GW	2	1	2	2	2	X	X	1	1	1
3. FFMP019W	05/20/19	1112	G	GW	2	1	2	2	2	X	X	1	1	1
4. FFMP029W	05/20/19	1205	G	GW	2	1	2	2	2	X	X	1	1	1
5. FFMP005W	05/20/19	1319	G	GW	2	1	2	2	2	X	X	1	1	1
6. FFMP26RW	05/20/19	1418	G	GW	2	1	2	2	2	X	X	1	1	1
7. Field Blank	05/20/19	1340	G	GW			2							
8. Trip Blank	05/20/19	1540	G	GW			2							
9														
10														

Cooler Temp: 5.9 Therm ID: 401

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

ALS Field Services: ☐Pickup ☐Labor ☐Composite_Sampling ☐Rental_Equipment ☐Other: _____

Project Comments:

LOGGED BY(signature): DATE TIME

REVIEWED BY(signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [illegible] ALS	5-20-19	1540	2 Cindy Reed ALS	5/20/19	1530
3			4		
5			6		
7			8		
9			10		

Data Deliverables: ☐Standard ☐CLP-like ☐USACE ☐

Special Processing: USACE ☐ Navy ☐ ☐

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

Reportable to PADEP? Yes ☐

PWSID # _____

Sample Disposal: Lab ☒ Special ☐

EDDS: Format Type- _____

* G=Grab; C=Composite

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

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

Rev 8/04

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

Condition of Sample Receipt Form

Client: LCSWMA | Work Order #: 3034898 | Initials: KM | Date: 5/20/19

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?	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): 5.9°C

Thermometer ID: 401

Radiological (µCi): _____

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

pH will be run w/ qualifier due to hold time

Lancaster County Solid Waste Management Authority

Frey Farm Landfill

Exceedence Report

Parameter Name	Units	Concentration	Criteria Conc	Qualifiers	Criteria
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP002W	*3035732003*	*05/23/2019*	*GW*		
NITRATE-NITROGEN	mg/l	22.30	10.00		EPA-MCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP028W	*3035363001*	*05/22/2019*	*GW*		
NITRATE-NITROGEN	mg/l	17.50	10.00		EPA-MCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP02SW	*3035363004*	*05/22/2019*	*GW*		
NITRATE-NITROGEN	mg/l	16.00	10.00		EPA-MCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP033W	*3035732001*	*05/23/2019*	*GW*		
NITRATE-NITROGEN	mg/l	10.80	10.00		EPA-MCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP03AW	*3035732005*	*05/23/2019*	*GW*		
NITRATE-NITROGEN	mg/l	17.70	10.00		EPA-MCL

Lancaster County Solid Waste Management Authority

Frey Farm Landfill

Exceedence Report

Parameter Name	Units	Concentration	Criteria Conc	Qualifiers	Criteria
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP002W	*3035732003*	*05/23/2019*	*GW*		
MANGANESE, DISSOLVED	mg/l	0.24	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.26	0.05		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP005W	*3034898005*	*05/20/2019*	*GW*		
MANGANESE, DISSOLVED	mg/l	0.09	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.12	0.05		EPA-SMCL
TDS (TOT. DISSOLVED SOLIDS)	mg/l	597.00	500.00		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP017W	*3034898001*	*05/20/2019*	*GW*		
CHLORIDE	mg/l	318.00	250.00		EPA-SMCL
IRON, TOTAL	mg/l	0.31	0.30		EPA-SMCL
MANGANESE, DISSOLVED	mg/l	0.45	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.53	0.05		EPA-SMCL
TDS (TOT. DISSOLVED SOLIDS)	mg/l	729.00	500.00		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP018W	*3034898002*	*05/20/2019*	*GW*		
MANGANESE, DISSOLVED	mg/l	0.23	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.28	0.05		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP02DW	*3035363003*	*05/22/2019*	*GW*		
CHLORIDE	mg/l	296.00	250.00		EPA-SMCL
MANGANESE, DISSOLVED	mg/l	0.38	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.39	0.05		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP02SW	*3035363004*	*05/22/2019*	*GW*		
IRON, TOTAL	mg/l	2.50	0.30		EPA-SMCL
TDS (TOT. DISSOLVED SOLIDS)	mg/l	878.00	500.00		EPA-SMCL

Parameter Name	Units	Concentration	Criteria Conc	Qualifiers	Criteria
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP031W	*3035732002*	*05/23/2019*	*GW*		
IRON, DISSOLVED	mg/l	3.90	0.30		EPA-SMCL
IRON, TOTAL	mg/l	4.60	0.30		EPA-SMCL
MANGANESE, DISSOLVED	mg/l	0.34	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.37	0.05		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP032W	*3035732004*	*05/23/2019*	*GW*		
IRON, DISSOLVED	mg/l	4.20	0.30		EPA-SMCL
IRON, TOTAL	mg/l	10.50	0.30		EPA-SMCL
MANGANESE, DISSOLVED	mg/l	0.59	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.66	0.05		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP033W	*3035732001*	*05/23/2019*	*GW*		
IRON, DISSOLVED	mg/l	6.00	0.30		EPA-SMCL
IRON, TOTAL	mg/l	8.80	0.30		EPA-SMCL
MANGANESE, DISSOLVED	mg/l	0.65	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.63	0.05		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP03AW	*3035732005*	*05/23/2019*	*GW*		
MANGANESE, DISSOLVED	mg/l	0.25	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.28	0.05		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP04AW	*3035930002*	*05/24/2019*	*GW*		
CHLORIDE	mg/l	303.00	250.00		EPA-SMCL
MANGANESE, DISSOLVED	mg/l	0.35	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.36	0.05		EPA-SMCL
TDS (TOT. DISSOLVED SOLIDS)	mg/l	955.00	500.00		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP26RW	*3034898006*	*05/20/2019*	*GW*		
MANGANESE, DISSOLVED	mg/l	0.64	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.77	0.05		EPA-SMCL
TDS (TOT. DISSOLVED SOLIDS)	mg/l	550.00	500.00		EPA-SMCL
Location ID	**Sample Number**	**Sample Date**	**Sample Type**	**Sample Depth**	
FFMP30RW	*3035930001*	*05/24/2019*	*GW*		
MANGANESE, DISSOLVED	mg/l	0.74	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.82	0.05		EPA-SMCL