

December 28, 2018

Charlene Sauls PG; Licensed Professional Geologist
Pennsylvania Department of Environmental Protection
Bureau of Waste Management
909 Elmerton Avenue
Harrisburg, PA 17110-8200

REF: Private Water Supply
4th Quarter 2018 Form 52 Water Quality Analysis
Frey Farm Landfill; BWM Permit #101389

Dear Ms. Sauls:

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

1. USEPA MCL's exceedance report; samples (3044RIVERRD, 3052RIVERRD, 3056 RIVERRD, 3060RIVERRD, 3076RIVERRD, 3088RIVERRD 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.
2. USEPA SMCL's exceedance report; samples 3088RIVERRD and 3125RIVERRD exceeded the limit for total dissolved solids; samples 3044 RIVERRD, 3056RIVERRD, 3060RIVERRD, 3076RIVERRD, 3079RIVERRD and 3125RIVERRD 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
Environmental Compliance Manager

Enclosures

Cc: Mark Reider, Dan Brown, Jeff Musser, Jordan Gallagher Bob Eshbach
Ed Rawski, Randy Weiss (PADEP)



Date Prepared/Revised 12/28/2018
DEP USE ONLY
Date Received

**FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES**

All information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 52, 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: Act 101 Section 1103	
SECTION A. SITE IDENTIFIER	
Applicant/permittee:	Lancaster County Solid Waste Manage
Site Name:	Frey Farm Landfill
Facility ID (as issued by DEP):	101389
SECTION B. PRIVATE WATER SUPPLY INFORMATION	
INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D ^o MM' SS.S")	
Facility Name:	Frey Farm Landfill
County:	Lancaster County
Township or Municipality:	MANOR TOWNSHIP
Landowner Name:	LCSWMA
Address:	3044 RIVER ROAD
Phone No.:	
Sampling Point:	Latitude: 39 ^o 57' 30.58" Longitude: 76 ^o 26' 11.25"
Depth to Water Level:	ft. Measured from: <input checked="" type="checkbox"/> Land Surface <input type="checkbox"/> TOC
Casing Stick Up:	ft. Elevation of Water Level: ft./MSL
Total Well Depth:	ft.
Sampling Depth:	ft. Sampling Method: <input type="checkbox"/> Pumped <input type="checkbox"/> Bailed
Well Purged:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Well Volumes Purged:
Sample Field Filtered (must be 0.45 micron)?:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Date:(mm/dd/yy)	11/21/2018 Sample Collection Time: 12:15 PM
Laboratory(ies) Performing Analysis	ALS Environmental
(include address and phone number)	34 Dogwood Lane Middletown, PA 17057 (717) 944-5541
Lab Accreditation Number(s)	22-293
Lab Analysis Date	12/06/2018
Were any holding times exceeded?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain in comments field.
Comments:	

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS LCSWMA

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1	SM4500D
BICARBONATE ALKALINITY	16	SM20-2321
CALCIUM, TOTAL	13	EPA 200.7
CALCIUM, DISSOLVED	13.2	EPA 200.7
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.2
CHLORIDE	21.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	120	EPA 200.7
IRON, DISSOLVED (ug/l)	60 ND	EPA 200.7
MAGNESIUM, TOTAL	10	EPA 200.7
MAGNESIUM, DISSOLVED	10.3	EPA 200.7
MANGANESE, TOTAL (ug/l)	74	EPA 200.7
MANGANESE, DISSOLVED (ug/l)	68	EPA 200.7
NITRATE-NITROGEN	18.3	EPA 300

T Please indicate detection limit if analyte is not detected.

FORM 52
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PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS LCSWMA

Sample Date

11/21/2018

1. Inorganics, continued (Enter all data in mg/l except as noted)

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
NITRITE - NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.01	FIELD
pH-LAB (SU)	5.88	SM4500B
POTASSIUM, TOTAL	1.5	EPA 200.7
POTASSIUM, DISSOLVED	1.4	EPA 200.7
SODIUM, TOTAL	7.9	EPA 200.7
SODIUM, DISSOLVED	8.1	EPA 200.7
SPEC. COND., FIELD (umhos/cm)	228	FIELD
SPEC. COND., LAB (umhos/cm)	225	EPA 120.1
SULFATE	2 ND	EPA 300
ALKALINITY	16	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	183	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2.5	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	EPA 420.4
TURBIDITY (NTU)	16.4	SM 2130B

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PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS LCSWMA

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
BENZENE	1 ND	EPA 524.2
1,2-DIBROMOETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHENE	1 ND	EPA 524.2
1,2-DICHLOROETHANE	1 ND	EPA 524.2
CIS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
TRANS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
ETHYLBENZENE	3.3	EPA 524.2
METHYLENE CHLORIDE	1 ND	EPA 524.2
TETRACHLOROETHENE	1 ND	EPA 524.2
TOLUENE	14.1	EPA 524.2
1,1,1-TRICHLOROETHANE	1 ND	EPA 524.2
TRICHLOROETHENE	1 ND	EPA 524.2
TRICHLOROFLUOROMETHANE	1 ND	EPA 524.2
VINYL CHLORIDE	1 ND	EPA 524.2
XYLENES (TOTAL)	17.2	EPA 524.2

T Please indicate detection limit if analyte is not detected.



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PRIVATE WATER SUPPLY
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General Reference: Act 101 Section 1103	
SECTION A. SITE IDENTIFIER	
Applicant/permittee:	Lancaster County Solid Waste Manage
Site Name:	Frey Farm Landfill
Facility ID (as issued by DEP):	101389
SECTION B. PRIVATE WATER SUPPLY INFORMATION	
INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D ^o MM' SS.S")	
Facility Name:	Frey Farm Landfill
County:	Lancaster County
Township or Municipality:	MANOR TOWNSHIP
Landowner Name:	MILLER
Address:	3052 RIVER ROAD
Phone No.:	
Sampling Point:	Latitude: 39 ^o 57' 29.85" Longitude: 76 ^o 26' 11.45"
Depth to Water Level:	ft. Measured from: <input checked="" type="checkbox"/> Land Surface <input type="checkbox"/> TOC
Casing Stick Up:	ft. Elevation of Water Level: ft./MSL
Total Well Depth:	ft.
Sampling Depth:	ft. Sampling Method: <input type="checkbox"/> Pumped <input type="checkbox"/> Bailed
Well Purged:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Well Volumes Purged:
Sample Field Filtered (must be 0.45 micron)?:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Date:(mm/dd/yy)	11/21/2018 Sample Collection Time: 1:28 PM
Laboratory(ies) Performing Analysis	ALS Environmental
(include address and phone number)	34 Dogwood Lane Middletown, PA 17057 (717) 944-5541
Lab Accreditation Number(s)	22-293
Lab Analysis Date	12/06/2018
Were any holding times exceeded?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain in comments field.
Comments:	

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS MILLER

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	SM4500D
BICARBONATE ALKALINITY	9	SM20-2321
CALCIUM, TOTAL	15.2	EPA 200.7
CALCIUM, DISSOLVED	15.9	EPA 200.7
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.2
CHLORIDE	21.2	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	30 ND	EPA 200.7
IRON, DISSOLVED (ug/l)	60 ND	EPA 200.7
MAGNESIUM, TOTAL	7.4	EPA 200.7
MAGNESIUM, DISSOLVED	7.9	EPA 200.7
MANGANESE, TOTAL (ug/l)	26	EPA 200.7
MANGANESE, DISSOLVED (ug/l)	27	EPA 200.7
NITRATE-NITROGEN	17.3	EPA 300

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FORM 52
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PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS MILLER

Sample Date

11/21/2018

1. Inorganics, continued (Enter all data in mg/l except as noted)

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
NITRITE - NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.1	FIELD
pH-LAB (SU)	6.03	SM4500B
POTASSIUM, TOTAL	1.4	EPA 200.7
POTASSIUM, DISSOLVED	1.4	EPA 200.7
SODIUM, TOTAL	6.9	EPA 200.7
SODIUM, DISSOLVED	7.4	EPA 200.7
SPEC. COND., FIELD (umhos/cm)	231	FIELD
SPEC. COND., LAB (umhos/cm)	227	EPA 120.1
SULFATE	2 ND	EPA 300
ALKALINITY	9	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	199	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.64	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	EPA 420.4
TURBIDITY (NTU)	0.96	SM 2130B

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PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS MILLER

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
BENZENE	1 ND	EPA 524.2
1,2-DIBROMOETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHENE	1 ND	EPA 524.2
1,2-DICHLOROETHANE	1 ND	EPA 524.2
CIS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
TRANS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
ETHYLBENZENE	1 ND	EPA 524.2
METHYLENE CHLORIDE	1 ND	EPA 524.2
TETRACHLOROETHENE	1 ND	EPA 524.2
TOLUENE	1 ND	EPA 524.2
1,1,1-TRICHLOROETHANE	1 ND	EPA 524.2
TRICHLOROETHENE	1 ND	EPA 524.2
TRICHLOROFLUOROMETHANE	1 ND	EPA 524.2
VINYL CHLORIDE	1 ND	EPA 524.2
XYLENES (TOTAL)	3 ND	EPA 524.2

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General Reference: Act 101 Section 1103	
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Applicant/permittee:	Lancaster County Solid Waste Manage
Site Name:	Frey Farm Landfill
Facility ID (as issued by DEP):	101389
SECTION B. PRIVATE WATER SUPPLY INFORMATION	
INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D ^o MM' SS.S")	
Facility Name:	Frey Farm Landfill
County:	Lancaster County
Township or Municipality:	MANOR TOWNSHIP
Landowner Name:	LCSWMA
Address:	3056 RIVER ROAD
Phone No.:	
Sampling Point:	Latitude: 39 ^o 57' 28.44" Longitude: 76 ^o 26' 10.43"
Depth to Water Level:	ft. Measured from: <input checked="" type="checkbox"/> Land Surface <input type="checkbox"/> TOC
Casing Stick Up:	ft. Elevation of Water Level: ft./MSL
Total Well Depth:	ft.
Sampling Depth:	ft. Sampling Method: <input type="checkbox"/> Pumped <input type="checkbox"/> Bailed
Well Purged:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Well Volumes Purged:
Sample Field Filtered (must be 0.45 micron)?:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Date:(mm/dd/yy)	11/21/2018 Sample Collection Time: 1:40 PM
Laboratory(ies) Performing Analysis	ALS Environmental
(include address and phone number)	34 Dogwood Lane Middletown, PA 17057 (717) 944-5541
Lab Accreditation Number(s)	22-293
Lab Analysis Date	12/06/2018
Were any holding times exceeded?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain in comments field.
Comments:	

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS LCSWMA

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	SM4500D
BICARBONATE ALKALINITY	7	SM20-2321
CALCIUM, TOTAL	9.7	EPA 200.7
CALCIUM, DISSOLVED	10	EPA 200.7
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.2
CHLORIDE	25.1	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	30 ND	EPA 200.7
IRON, DISSOLVED (ug/l)	60 ND	EPA 200.7
MAGNESIUM, TOTAL	12	EPA 200.7
MAGNESIUM, DISSOLVED	12.7	EPA 200.7
MANGANESE, TOTAL (ug/l)	97	EPA 200.7
MANGANESE, DISSOLVED (ug/l)	100	EPA 200.7
NITRATE-NITROGEN	18.3	EPA 300

T Please indicate detection limit if analyte is not detected.

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PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS LCSWMA

Sample Date

11/21/2018

1. Inorganics, continued (Enter all data in mg/l except as noted)

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
NITRITE - NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	5.89	FIELD
pH-LAB (SU)	5.78	SM4500B
POTASSIUM, TOTAL	1.9	EPA 200.7
POTASSIUM, DISSOLVED	1.8	EPA 200.7
SODIUM, TOTAL	7.2	EPA 200.7
SODIUM, DISSOLVED	7.7	EPA 200.7
SPEC. COND., FIELD (umhos/cm)	232	FIELD
SPEC. COND., LAB (umhos/cm)	228	EPA 120.1
SULFATE	2 ND	EPA 300
ALKALINITY	7	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	178	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	EPA 420.4
TURBIDITY (NTU)	0.1 ND	SM 2130B

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS LCSWMA

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
BENZENE	1 ND	EPA 524.2
1,2-DIBROMOETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHENE	1 ND	EPA 524.2
1,2-DICHLOROETHANE	1 ND	EPA 524.2
CIS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
TRANS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
ETHYLBENZENE	1 ND	EPA 524.2
METHYLENE CHLORIDE	1 ND	EPA 524.2
TETRACHLOROETHENE	1 ND	EPA 524.2
TOLUENE	1 ND	EPA 524.2
1,1,1-TRICHLOROETHANE	1 ND	EPA 524.2
TRICHLOROETHENE	1 ND	EPA 524.2
TRICHLOROFLUOROMETHANE	1 ND	EPA 524.2
VINYL CHLORIDE	1 ND	EPA 524.2
XYLENES (TOTAL)	3 ND	EPA 524.2

T Please indicate detection limit if analyte is not detected.



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General Reference: Act 101 Section 1103	
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Applicant/permittee:	Lancaster County Solid Waste Manage
Site Name:	Frey Farm Landfill
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SECTION B. PRIVATE WATER SUPPLY INFORMATION	
INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D ^o MM' SS.S")	
Facility Name:	Frey Farm Landfill
County:	Lancaster County
Township or Municipality:	MANOR TOWNSHIP
Landowner Name:	LCSWMA
Address:	3060 RIVER ROAD
Phone No.:	
Sampling Point:	Latitude: 39 ^o 57' 27.63" Longitude: 76 ^o 26' 10.01"
Depth to Water Level:	ft. Measured from: <input checked="" type="checkbox"/> Land Surface <input type="checkbox"/> TOC
Casing Stick Up:	ft. Elevation of Water Level: ft./MSL
Total Well Depth:	ft.
Sampling Depth:	ft. Sampling Method: <input type="checkbox"/> Pumped <input type="checkbox"/> Bailed
Well Purged:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Well Volumes Purged:
Sample Field Filtered (must be 0.45 micron)?:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Date:(mm/dd/yy)	11/20/2018 Sample Collection Time: 11:03 AM
Laboratory(ies) Performing Analysis	ALS Environmental
(include address and phone number)	34 Dogwood Lane Middletown, PA 17057 (717) 944-5541
Lab Accreditation Number(s)	22-293
Lab Analysis Date	12/05/2018
Were any holding times exceeded?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain in comments field.
Comments:	

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QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

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Monitoring Point I.D. No.

PS LCSWMA

Sample Date

11/20/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.599	SM4500D
BICARBONATE ALKALINITY	5 ND	SM20-2321
CALCIUM, TOTAL	12.6	EPA 200.7
CALCIUM, DISSOLVED	12.7	EPA 200.7
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.2
CHLORIDE	22.7	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	30 ND	EPA 200.7
IRON, DISSOLVED (ug/l)	60 ND	EPA 200.7
MAGNESIUM, TOTAL	11.7	EPA 200.7
MAGNESIUM, DISSOLVED	11.1	EPA 200.7
MANGANESE, TOTAL (ug/l)	140	EPA 200.7
MANGANESE, DISSOLVED (ug/l)	130	EPA 200.7
NITRATE-NITROGEN	19.1	EPA 300

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Monitoring Point I.D. No.

PS LCSWMA

Sample Date

11/20/2018

1. Inorganics, continued (Enter all data in mg/l except as noted)

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
NITRITE - NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	5.21	FIELD
pH-LAB (SU)	5.03	SM4500B
POTASSIUM, TOTAL	2.9	EPA 200.7
POTASSIUM, DISSOLVED	2.7	EPA 200.7
SODIUM, TOTAL	7.8	EPA 200.7
SODIUM, DISSOLVED	7.4	EPA 200.7
SPEC. COND., FIELD (umhos/cm)	238	FIELD
SPEC. COND., LAB (umhos/cm)	242	EPA 120.1
SULFATE	14.8	EPA 300
ALKALINITY	5 ND	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	244	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	EPA 420.4
TURBIDITY (NTU)	0.1 ND	SM 2130B

T Please indicate detection limit if analyte is not detected.

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
BENZENE	1 ND	EPA 524.2
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1,1-DICHLOROETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHENE	1 ND	EPA 524.2
1,2-DICHLOROETHANE	1 ND	EPA 524.2
CIS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
TRANS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
ETHYLBENZENE	1 ND	EPA 524.2
METHYLENE CHLORIDE	1 ND	EPA 524.2
TETRACHLOROETHENE	1 ND	EPA 524.2
TOLUENE	1 ND	EPA 524.2
1,1,1-TRICHLOROETHANE	1 ND	EPA 524.2
TRICHLOROETHENE	1 ND	EPA 524.2
TRICHLOROFLUOROMETHANE	1 ND	EPA 524.2
VINYL CHLORIDE	1 ND	EPA 524.2
XYLENES (TOTAL)	3 ND	EPA 524.2

T Please indicate detection limit if analyte is not detected.



Date Prepared/Revised 12/28/2018
DEP USE ONLY
Date Received

FORM 52 MUNICIPAL WASTE LANDFILL PRIVATE WATER SUPPLY QUARTERLY WATER QUALITY ANALYSES

All information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 52, 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: Act 101 Section 1103	
SECTION A. SITE IDENTIFIER	
Applicant/permittee:	Lancaster County Solid Waste Manage
Site Name:	Frey Farm Landfill
Facility ID (as issued by DEP):	101389
SECTION B. PRIVATE WATER SUPPLY INFORMATION	
INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D ^o MM' SS.S")	
Facility Name:	Frey Farm Landfill
County:	Lancaster County
Township or Municipality:	MANOR TOWNSHIP
Landowner Name:	SENSENICH
Address:	3076 RIVER ROAD
Phone No.:	
Sampling Point:	Latitude: 39 ^o 57' 28.2" Longitude: 76 ^o 26' 11.1"
Depth to Water Level:	ft. Measured from: <input checked="" type="checkbox"/> Land Surface <input type="checkbox"/> TOC
Casing Stick Up:	ft. Elevation of Water Level: ft./MSL
Total Well Depth:	ft.
Sampling Depth:	ft. Sampling Method: <input type="checkbox"/> Pumped <input type="checkbox"/> Bailed
Well Purged:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Well Volumes Purged:
Sample Field Filtered (must be 0.45 micron)?:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Date:(mm/dd/yy)	11/21/2018 Sample Collection Time: 11:55 AM
Laboratory(ies) Performing Analysis	ALS Environmental
(include address and phone number)	34 Dogwood Lane Middletown, PA 17057 (717) 944-5541
Lab Accreditation Number(s)	22-293
Lab Analysis Date	12/06/2018
Were any holding times exceeded?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain in comments field.
Comments:	

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS SENSENICH

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	SM4500D
BICARBONATE ALKALINITY	9	SM20-2321
CALCIUM, TOTAL	14.2	EPA 200.7
CALCIUM, DISSOLVED	14.7	EPA 200.7
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.2
CHLORIDE	44	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	30 ND	EPA 200.7
IRON, DISSOLVED (ug/l)	60 ND	EPA 200.7
MAGNESIUM, TOTAL	8.6	EPA 200.7
MAGNESIUM, DISSOLVED	9.1	EPA 200.7
MANGANESE, TOTAL (ug/l)	180	EPA 200.7
MANGANESE, DISSOLVED (ug/l)	190	EPA 200.7
NITRATE-NITROGEN	10.9	EPA 300

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS SENSENICH

Sample Date

11/21/2018

1. Inorganics, continued (Enter all data in mg/l except as noted)

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
NITRITE - NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.13	FIELD
pH-LAB (SU)	5.86	SM4500B
POTASSIUM, TOTAL	2.9	EPA 200.7
POTASSIUM, DISSOLVED	3.2	EPA 200.7
SODIUM, TOTAL	18.9	EPA 200.7
SODIUM, DISSOLVED	20.3	EPA 200.7
SPEC. COND., FIELD (umhos/cm)	298	FIELD
SPEC. COND., LAB (umhos/cm)	283	EPA 120.1
SULFATE	14.7	EPA 300
ALKALINITY	9	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	227	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.59	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	EPA 420.4
TURBIDITY (NTU)	0.1 ND	SM 2130B

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS SENSENICH

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
BENZENE	1 ND	EPA 524.2
1,2-DIBROMOETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHENE	1 ND	EPA 524.2
1,2-DICHLOROETHANE	1 ND	EPA 524.2
CIS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
TRANS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
ETHYLBENZENE	1 ND	EPA 524.2
METHYLENE CHLORIDE	1 ND	EPA 524.2
TETRACHLOROETHENE	1 ND	EPA 524.2
TOLUENE	1 ND	EPA 524.2
1,1,1-TRICHLOROETHANE	1 ND	EPA 524.2
TRICHLOROETHENE	1 ND	EPA 524.2
TRICHLOROFLUOROMETHANE	1 ND	EPA 524.2
VINYL CHLORIDE	1 ND	EPA 524.2
XYLENES (TOTAL)	3 ND	EPA 524.2

T Please indicate detection limit if analyte is not detected.



Date Prepared/Revised 12/28/2018
DEP USE ONLY
Date Received

**FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES**

All information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 52, 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: Act 101 Section 1103	
SECTION A. SITE IDENTIFIER	
Applicant/permittee:	Lancaster County Solid Waste Manage
Site Name:	Frey Farm Landfill
Facility ID (as issued by DEP):	101389
SECTION B. PRIVATE WATER SUPPLY INFORMATION	
INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D ^o MM' SS.S")	
Facility Name:	Frey Farm Landfill
County:	Lancaster County
Township or Municipality:	MANOR TOWNSHIP
Landowner Name:	LCSWMA
Address:	3079 RIVER ROAD
Phone No.:	
Sampling Point:	Latitude: 39 ^o 57' 21.99" Longitude: 76 ^o 26' 10.58"
Depth to Water Level:	ft. Measured from: <input checked="" type="checkbox"/> Land Surface <input type="checkbox"/> TOC
Casing Stick Up:	ft. Elevation of Water Level: ft./MSL
Total Well Depth:	ft.
Sampling Depth:	ft. Sampling Method: <input type="checkbox"/> Pumped <input type="checkbox"/> Bailed
Well Purged:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Well Volumes Purged:
Sample Field Filtered (must be 0.45 micron)?:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Date:(mm/dd/yy)	11/20/2018 Sample Collection Time: 11:39 AM
Laboratory(ies) Performing Analysis	ALS Environmental
(include address and phone number)	34 Dogwood Lane Middletown, PA 17057 (717) 944-5541
Lab Accreditation Number(s)	22-293
Lab Analysis Date	12/05/2018
Were any holding times exceeded?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain in comments field.
Comments:	

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS	LCSWMA
----	--------

Sample Date

11/20/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.15	SM4500D
BICARBONATE ALKALINITY	26	SM20-2321
CALCIUM, TOTAL	9.4	EPA 200.7
CALCIUM, DISSOLVED	9.5	EPA 200.7
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.2
CHLORIDE	31.3	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	30 ND	EPA 200.7
IRON, DISSOLVED (ug/l)	60 ND	EPA 200.7
MAGNESIUM, TOTAL	5.7	EPA 200.7
MAGNESIUM, DISSOLVED	5.3	EPA 200.7
MANGANESE, TOTAL (ug/l)	210	EPA 200.7
MANGANESE, DISSOLVED (ug/l)	200	EPA 200.7
NITRATE-NITROGEN	0.2 ND	EPA 300

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS LCSWMA

Sample Date

11/20/2018

1. Inorganics, continued (Enter all data in mg/l except as noted)

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
NITRITE - NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.07	FIELD
pH-LAB (SU)	6.13	SM4500B
POTASSIUM, TOTAL	1.9	EPA 200.7
POTASSIUM, DISSOLVED	1.8	EPA 200.7
SODIUM, TOTAL	12.1	EPA 200.7
SODIUM, DISSOLVED	11.6	EPA 200.7
SPEC. COND., FIELD (umhos/cm)	184	FIELD
SPEC. COND., LAB (umhos/cm)	172	EPA 120.1
SULFATE	15.5	EPA 300
ALKALINITY	26	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	84	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.54	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	EPA 420.4
TURBIDITY (NTU)	0.1 ND	SM 2130B

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS LCSWMA

Sample Date

11/20/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
BENZENE	1 ND	EPA 524.2
1,2-DIBROMOETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHENE	1 ND	EPA 524.2
1,2-DICHLOROETHANE	1 ND	EPA 524.2
CIS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
TRANS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
ETHYLBENZENE	1 ND	EPA 524.2
METHYLENE CHLORIDE	1 ND	EPA 524.2
TETRACHLOROETHENE	1 ND	EPA 524.2
TOLUENE	1 ND	EPA 524.2
1,1,1-TRICHLOROETHANE	1 ND	EPA 524.2
TRICHLOROETHENE	1 ND	EPA 524.2
TRICHLOROFLUOROMETHANE	1 ND	EPA 524.2
VINYL CHLORIDE	1 ND	EPA 524.2
XYLENES (TOTAL)	3 ND	EPA 524.2

T Please indicate detection limit if analyte is not detected.



Date Prepared/Revised 12/28/2018
DEP USE ONLY
Date Received

**FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES**

All information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 52, 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: Act 101 Section 1103	
SECTION A. SITE IDENTIFIER	
Applicant/permittee:	Lancaster County Solid Waste Manage
Site Name:	Frey Farm Landfill
Facility ID (as issued by DEP):	101389
SECTION B. PRIVATE WATER SUPPLY INFORMATION	
INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D ^o MM' SS.S")	
Facility Name:	Frey Farm Landfill
County:	Lancaster County
Township or Municipality:	MANOR TOWNSHIP
Landowner Name:	WEBER
Address:	3088 RIVER ROAD
Phone No.:	
Sampling Point:	Latitude: 39 ^o 57' 21" Longitude: 76 ^o 26' 7.1"
Depth to Water Level:	ft. Measured from: <input checked="" type="checkbox"/> Land Surface <input type="checkbox"/> TOC
Casing Stick Up:	ft. Elevation of Water Level: ft./MSL
Total Well Depth:	ft.
Sampling Depth:	ft. Sampling Method: <input type="checkbox"/> Pumped <input type="checkbox"/> Bailed
Well Purged:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Well Volumes Purged:
Sample Field Filtered (must be 0.45 micron)?:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Date:(mm/dd/yy)	11/20/2018 Sample Collection Time: 9:31 AM
Laboratory(ies) Performing Analysis	ALS Environmental
(include address and phone number)	34 Dogwood Lane Middletown, PA 17057 (717) 944-5541
Lab Accreditation Number(s)	22-293
Lab Analysis Date	12/05/2018
Were any holding times exceeded?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain in comments field.
Comments:	

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS WEBER

Sample Date

11/20/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	SM4500D
BICARBONATE ALKALINITY	143	SM20-2321
CALCIUM, TOTAL	0.13	EPA 200.7
CALCIUM, DISSOLVED	0.14	EPA 200.7
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.2
CHLORIDE	241	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	30 ND	EPA 200.7
IRON, DISSOLVED (ug/l)	60 ND	EPA 200.7
MAGNESIUM, TOTAL	0.083	EPA 200.7
MAGNESIUM, DISSOLVED	0.1 ND	EPA 200.7
MANGANESE, TOTAL (ug/l)	2.5 ND	EPA 200.7
MANGANESE, DISSOLVED (ug/l)	5 ND	EPA 200.7
NITRATE-NITROGEN	12	EPA 300

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS WEBER

Sample Date

11/20/2018

1. Inorganics, continued (Enter all data in mg/l except as noted)

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
NITRITE - NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	7.09	FIELD
pH-LAB (SU)	7.22	SM4500B
POTASSIUM, TOTAL	3.3	EPA 200.7
POTASSIUM, DISSOLVED	3	EPA 200.7
SODIUM, TOTAL	235	EPA 200.7
SODIUM, DISSOLVED	231	EPA 200.7
SPEC. COND., FIELD (umhos/cm)	1180	FIELD
SPEC. COND., LAB (umhos/cm)	1220	EPA 120.1
SULFATE	35.8	EPA 300
ALKALINITY	143	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	1250	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.3	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	EPA 420.4
TURBIDITY (NTU)	0.1 ND	SM 2130B

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS WEBER

Sample Date

11/20/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
BENZENE	1 ND	EPA 524.2
1,2-DIBROMOETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHENE	1 ND	EPA 524.2
1,2-DICHLOROETHANE	1 ND	EPA 524.2
CIS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
TRANS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
ETHYLBENZENE	1 ND	EPA 524.2
METHYLENE CHLORIDE	1 ND	EPA 524.2
TETRACHLOROETHENE	1 ND	EPA 524.2
TOLUENE	1 ND	EPA 524.2
1,1,1-TRICHLOROETHANE	1 ND	EPA 524.2
TRICHLOROETHENE	1 ND	EPA 524.2
TRICHLOROFLUOROMETHANE	1 ND	EPA 524.2
VINYL CHLORIDE	1 ND	EPA 524.2
XYLENES (TOTAL)	3 ND	EPA 524.2

T Please indicate detection limit if analyte is not detected.



Date Prepared/Revised 12/28/2018
DEP USE ONLY
Date Received

**FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES**

All information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 52, 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: Act 101 Section 1103	
SECTION A. SITE IDENTIFIER	
Applicant/permittee:	Lancaster County Solid Waste Manage
Site Name:	Frey Farm Landfill
Facility ID (as issued by DEP):	101389
SECTION B. PRIVATE WATER SUPPLY INFORMATION	
INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D ^o MM' SS.S")	
Facility Name:	Frey Farm Landfill
County:	Lancaster County
Township or Municipality:	MANOR TOWNSHIP
Landowner Name:	KIRCHNER
Address:	3100 RIVER ROAD
Phone No.:	
Sampling Point:	Latitude: 39° 57' 17.9" Longitude: 76° 26' 6.28"
Depth to Water Level:	ft. Measured from: <input checked="" type="checkbox"/> Land Surface <input type="checkbox"/> TOC
Casing Stick Up:	ft. Elevation of Water Level: ft./MSL
Total Well Depth:	ft. Sampling Method: <input type="checkbox"/> Pumped <input type="checkbox"/> Bailed
Sampling Depth:	ft. Well Volumes Purged:
Well Purged:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sample Field Filtered (must be 0.45 micron)?:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Date:(mm/dd/yy)	11/20/2018 Sample Collection Time: 10:12 AM
Laboratory(ies) Performing Analysis	ALS Environmental
(include address and phone number)	34 Dogwood Lane Middletown, PA 17057 (717) 944-5541
Lab Accreditation Number(s)	22-293
Lab Analysis Date	12/05/2018
Were any holding times exceeded?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain in comments field.
Comments:	

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS KIRCHNER

Sample Date

11/20/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	SM4500D
BICARBONATE ALKALINITY	28	SM20-2321
CALCIUM, TOTAL	21.2	EPA 200.7
CALCIUM, DISSOLVED	21.5	EPA 200.7
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.2
CHLORIDE	49.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	30 ND	EPA 200.7
IRON, DISSOLVED (ug/l)	60 ND	EPA 200.7
MAGNESIUM, TOTAL	8.4	EPA 200.7
MAGNESIUM, DISSOLVED	7.9	EPA 200.7
MANGANESE, TOTAL (ug/l)	12	EPA 200.7
MANGANESE, DISSOLVED (ug/l)	12	EPA 200.7
NITRATE-NITROGEN	6.2	EPA 300

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS KIRCHNER

Sample Date

11/20/2018

1. Inorganics, continued (Enter all data in mg/l except as noted)

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
NITRITE - NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.11	FIELD
pH-LAB (SU)	6.01	SM4500B
POTASSIUM, TOTAL	1.5	EPA 200.7
POTASSIUM, DISSOLVED	1.4	EPA 200.7
SODIUM, TOTAL	15.9	EPA 200.7
SODIUM, DISSOLVED	15.2	EPA 200.7
SPEC. COND., FIELD (umhos/cm)	238	FIELD
SPEC. COND., LAB (umhos/cm)	276	EPA 120.1
SULFATE	6.8	EPA 300
ALKALINITY	28	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	260	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	EPA 420.4
TURBIDITY (NTU)	0.1 ND	SM 2130B

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS KIRCHNER

Sample Date

11/20/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
BENZENE	1 ND	EPA 524.2
1,2-DIBROMOETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHENE	1 ND	EPA 524.2
1,2-DICHLOROETHANE	1 ND	EPA 524.2
CIS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
TRANS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
ETHYLBENZENE	1 ND	EPA 524.2
METHYLENE CHLORIDE	1 ND	EPA 524.2
TETRACHLOROETHENE	1 ND	EPA 524.2
TOLUENE	1 ND	EPA 524.2
1,1,1-TRICHLOROETHANE	1 ND	EPA 524.2
TRICHLOROETHENE	1 ND	EPA 524.2
TRICHLOROFLUOROMETHANE	1 ND	EPA 524.2
VINYL CHLORIDE	1 ND	EPA 524.2
XYLENES (TOTAL)	3 ND	EPA 524.2

T Please indicate detection limit if analyte is not detected.



Date Prepared/Revised 12/28/2018
DEP USE ONLY
Date Received

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

All information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 52, 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: Act 101 Section 1103	
SECTION A. SITE IDENTIFIER	
Applicant/permittee:	Lancaster County Solid Waste Manage
Site Name:	Frey Farm Landfill
Facility ID (as issued by DEP):	101389
SECTION B. PRIVATE WATER SUPPLY INFORMATION	
INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DE° MM' SS.S")	
Facility Name:	Frey Farm Landfill
County:	Lancaster County
Township or Municipality:	MANOR TOWNSHIP
Landowner Name:	FRY
Address:	3106 RIVER ROAD
Phone No.:	
Sampling Point:	Latitude: 39° 57' 17.27" Longitude: 76° 26' 5.6"
Depth to Water Level:	ft. Measured from: <input checked="" type="checkbox"/> Land Surface <input type="checkbox"/> TOC
Casing Stick Up:	ft. Elevation of Water Level: _____ ft./MSL
Total Well Depth:	ft.
Sampling Depth:	ft. Sampling Method: <input type="checkbox"/> Pumped <input type="checkbox"/> Bailed
Well Purged:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Well Volumes Purged: _____
Sample Field Filtered (must be 0.45 micron)?:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Date:(mm/dd/yy)	11/21/2018 Sample Collection Time: 11:25 AM
Laboratory(ies) Performing Analysis	ALS Environmental
(include address and phone number)	34 Dogwood Lane Middletown, PA 17057 (717) 944-5541
Lab Accreditation Number(s)	22-293
Lab Analysis Date	12/06/2018
Were any holding times exceeded?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain in comments field.
Comments:	

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS FRY

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	SM4500D
BICARBONATE ALKALINITY	28	SM20-2321
CALCIUM, TOTAL	16.4	EPA 200.7
CALCIUM, DISSOLVED	0.1 ND	EPA 200.7
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.2
CHLORIDE	70.3	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	30 ND	EPA 200.7
IRON, DISSOLVED (ug/l)	60 ND	EPA 200.7
MAGNESIUM, TOTAL	10.4	EPA 200.7
MAGNESIUM, DISSOLVED	0.1 ND	EPA 200.7
MANGANESE, TOTAL (ug/l)	34	EPA 200.7
MANGANESE, DISSOLVED (ug/l)	5 ND	EPA 200.7
NITRATE-NITROGEN	11.3	EPA 300

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS FRY

Sample Date

11/21/2018

1. Inorganics, continued (Enter all data in mg/l except as noted)

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
NITRITE - NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.14	FIELD
pH-LAB (SU)	6.07	SM4500B
POTASSIUM, TOTAL	1.6	EPA 200.7
POTASSIUM, DISSOLVED	0.5 ND	EPA 200.7
SODIUM, TOTAL	35.4	EPA 200.7
SODIUM, DISSOLVED	0.5 ND	EPA 200.7
SPEC. COND., FIELD (umhos/cm)	359	FIELD
SPEC. COND., LAB (umhos/cm)	371	EPA 120.1
SULFATE	9.2	EPA 300
ALKALINITY	28	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	255	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.83	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	EPA 420.4
TURBIDITY (NTU)	0.21	SM 2130B

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS FRY

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
BENZENE	1 ND	EPA 524.2
1,2-DIBROMOETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHENE	1 ND	EPA 524.2
1,2-DICHLOROETHANE	1 ND	EPA 524.2
CIS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
TRANS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
ETHYLBENZENE	1 ND	EPA 524.2
METHYLENE CHLORIDE	1 ND	EPA 524.2
TETRACHLOROETHENE	1 ND	EPA 524.2
TOLUENE	1 ND	EPA 524.2
1,1,1-TRICHLOROETHANE	1 ND	EPA 524.2
TRICHLOROETHENE	1 ND	EPA 524.2
TRICHLOROFLUOROMETHANE	1 ND	EPA 524.2
VINYL CHLORIDE	1 ND	EPA 524.2
XYLENES (TOTAL)	3 ND	EPA 524.2

T Please indicate detection limit if analyte is not detected.



Date Prepared/Revised 12/28/2018
DEP USE ONLY
Date Received

**FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES**

All information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 52, 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: Act 101 Section 1103	
SECTION A. SITE IDENTIFIER	
Applicant/permittee:	Lancaster County Solid Waste Manage
Site Name:	Frey Farm Landfill
Facility ID (as issued by DEP):	101389
SECTION B. PRIVATE WATER SUPPLY INFORMATION	
INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D ^o MM' SS.S")	
Facility Name:	Frey Farm Landfill
County:	Lancaster County
Township or Municipality:	MANOR TOWNSHIP
Landowner Name:	BECK
Address:	3125 RIVER ROAD
Phone No.:	
Sampling Point: Latitude:	39 ^o 57' 11.6"
Longitude:	76 ^o 26' 5.4"
Depth to Water Level:	ft. Measured from: <input checked="" type="checkbox"/> Land Surface <input type="checkbox"/> TOC
Casing Stick Up:	ft. Elevation of Water Level: ft./MSL
Total Well Depth:	ft. Sampling Method: <input type="checkbox"/> Pumped <input type="checkbox"/> Bailed
Sampling Depth:	ft. Well Volumes Purged:
Well Purged:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sample Field Filtered (must be 0.45 micron)?:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Date:(mm/dd/yy)	11/21/2018
Sample Collection Time:	11:28 AM
Laboratory(ies) Performing Analysis	ALS Environmental
(include address and phone number)	34 Dogwood Lane Middletown, PA 17057 (717) 944-5541
Lab Accreditation Number(s)	22-293
Lab Analysis Date	12/10/2018
Were any holding times exceeded?:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please explain in comments field.
Comments:	

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS BECK

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	SM4500D
BICARBONATE ALKALINITY	155	SM20-2321
CALCIUM, TOTAL	1.8	EPA 200.7
CALCIUM, DISSOLVED	6.2	EPA 200.7
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.2
CHLORIDE	108	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	30 ND	EPA 200.7
IRON, DISSOLVED (ug/l)	60 ND	EPA 200.7
MAGNESIUM, TOTAL	0.42	EPA 200.7
MAGNESIUM, DISSOLVED	7.1	EPA 200.7
MANGANESE, TOTAL (ug/l)	2.5 ND	EPA 200.7
MANGANESE, DISSOLVED (ug/l)	56	EPA 200.7
NITRATE-NITROGEN	7.7	EPA 300

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS BECK

Sample Date

11/21/2018

1. Inorganics, continued (Enter all data in mg/l except as noted)

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
NITRITE - NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	7.34	FIELD
pH-LAB (SU)	7.41	SM4500B
POTASSIUM, TOTAL	10.4	EPA 200.7
POTASSIUM, DISSOLVED	5.7	EPA 200.7
SODIUM, TOTAL	149	EPA 200.7
SODIUM, DISSOLVED	76.3	EPA 200.7
SPEC. COND., FIELD (umhos/cm)	789	FIELD
SPEC. COND., LAB (umhos/cm)	819	EPA 120.1
SULFATE	28.2	EPA 300
ALKALINITY	155	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	538	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2.2	SM20-5310B
TOTAL PHENOLICS (ug/l)	5 ND	EPA 420.4
TURBIDITY (NTU)	0.1 ND	SM 2130B

T Please indicate detection limit if analyte is not detected.

FORM 52
MUNICIPAL WASTE LANDFILL
PRIVATE WATER SUPPLY
QUARTERLY WATER QUALITY ANALYSES

Facility I.D. Number

101389

Monitoring Point I.D. No.

PS BECK

Sample Date

11/21/2018

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

PARAMETER	VALUE	ANALYSIS METHOD NUMBER
BENZENE	1 ND	EPA 524.2
1,2-DIBROMOETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHANE	1 ND	EPA 524.2
1,1-DICHLOROETHENE	1 ND	EPA 524.2
1,2-DICHLOROETHANE	1 ND	EPA 524.2
CIS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
TRANS 1,2-DICHLOROETHENE	1 ND	EPA 524.2
ETHYLBENZENE	1 ND	EPA 524.2
METHYLENE CHLORIDE	1 ND	EPA 524.2
TETRACHLOROETHENE	1 ND	EPA 524.2
TOLUENE	1 ND	EPA 524.2
1,1,1-TRICHLOROETHANE	1 ND	EPA 524.2
TRICHLOROETHENE	1 ND	EPA 524.2
TRICHLOROFLUOROMETHANE	1 ND	EPA 524.2
VINYL CHLORIDE	1 ND	EPA 524.2
XYLENES (TOTAL)	3 ND	EPA 524.2

T Please indicate detection limit if analyte is not detected.

December 10, 2018

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

Certificate of Analysis

Project Name:	CONTIGUOUS LANDOWNER- 3044 RIVER RD	Workorder:	3002096
Purchase Order:	PO1000126	Workorder ID:	3044 RIVER ROAD

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, November 21, 2018.

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

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

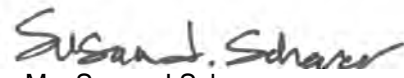
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

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

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

CC: 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.


Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3002096 3044 RIVER ROAD

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3002096001	3044 River Road, Conestoga, PA	Water	11/21/2018 12:15	11/21/2018 18:41	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3002096 3044 RIVER ROAD

Notes

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

Standard Acronyms/Flags

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: 3002096 3044 RIVER ROAD

Lab ID: **3002096001** Date Collected: 11/21/2018 12:15 Matrix: Water
Sample ID: **3044 River Road, Conestoga, PA** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Alkalinity, Bicarbonate	16		mg/L	5	SM2320B-2011			11/28/18 07:06	MSA	C
Alkalinity, Total	16	1	mg/L	5	SM2320B-2011			11/28/18 07:06	MSA	C
Ammonia-N	0.100		mg/L	0.100	D6919-09			12/4/18 05:47	NJA	B
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			12/6/18 18:18	AK	B
Chloride	21.6		mg/L	2.0	EPA 300.0			11/22/18 12:37	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			11/22/18 12:37	CHW	C
Halogen, Total Organic (TOX)	ND		ug/L	20.0	SW846 9020B			12/3/18 11:57	PAG	I
Nitrate-N	18.3		mg/L	0.20	EPA 300.0			11/22/18 12:37	CHW	C
Nitrite-N	ND		mg/L	0.20	EPA 300.0			11/22/18 12:37	CHW	C
pH	5.88	2	pH_Units		S4500HB-11			11/28/18 07:06	MSA	C
Phenolics	ND		mg/L	0.005	EPA 420.4	11/30/18 15:59	C_D	12/3/18 14:10	C_D	H
Specific Conductance	225		umhos/cm	1	SM2510B-2011			11/28/18 07:06	MSA	C
Sulfate	ND		mg/L	2.0	EPA 300.0			11/22/18 12:37	CHW	C
Total Dissolved Solids	183	4,5	mg/L	5	S2540C-11			12/3/18 16:45	EXS	C
Total Organic Carbon (TOC)	2.5		mg/L	0.50	SM5310B-2011			12/6/18 09:56	PAG	F
Turbidity	16.4		NTU	0.10	SM2130B-2011			11/22/18 07:25	MBW	C
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
Ethylbenzene	3.3		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
Toluene	14.1		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
Total Xylenes	17.2		ug/L	3.0	SW846 8260B			12/1/18 01:15	PDK	L
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
Trichloroethene	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			12/1/18 01:15	PDK	L
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>

ALS Environmental Laboratory Locations Across North America

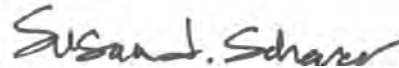
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ANALYTICAL RESULTS

Workorder: 3002096 3044 RIVER ROAD

 Lab ID: **3002096001** Date Collected: 11/21/2018 12:15 Matrix: Water
 Sample ID: **3044 River Road, Conestoga, PA** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
1,2-Dichloroethane-d4 (S)	99		%	62 - 133	SW846 8260B			12/1/18 01:15	PDK	L
4-Bromofluorobenzene (S)	103		%	79 - 114	SW846 8260B			12/1/18 01:15	PDK	L
Dibromofluoromethane (S)	93		%	78 - 116	SW846 8260B			12/1/18 01:15	PDK	L
Toluene-d8 (S)	91.2		%	76 - 127	SW846 8260B			12/1/18 01:15	PDK	L
METALS										
Calcium, Total	13.0		mg/L	0.050	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:13	SRT	D3
Calcium, Dissolved	13.2		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:44	SRT	E
Iron, Total	0.12		mg/L	0.030	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:13	SRT	D3
Iron, Dissolved	ND		mg/L	0.060	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:44	SRT	E
Magnesium, Total	10.0		mg/L	0.050	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:13	SRT	D3
Magnesium, Dissolved	10.3		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:44	SRT	E
Manganese, Total	0.074		mg/L	0.0025	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:13	SRT	D3
Manganese, Dissolved	0.068		mg/L	0.0050	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:44	SRT	E
Potassium, Total	1.5		mg/L	0.25	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:13	SRT	D3
Potassium, Dissolved	1.4		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:44	SRT	E
Sodium, Total	7.9		mg/L	0.25	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:13	SRT	D3
Sodium, Dissolved	8.1		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:44	SRT	E
FIELD PARAMETERS										
pH, Field (SM4500B)	6.01		pH_Units		Field			11/21/18 12:15	BGS	N
Specific Conductance, Field	228		umhos/cm	1	Field			11/21/18 12:15	BGS	N
Temperature	15.00		Deg. C		Field			11/21/18 12:15	BGS	N



Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3002096 3044 RIVER ROAD

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3002096001	1	3044 River Road, Conestoga, PA	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3002096001	2	3044 River Road, Conestoga, PA	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.				
3002096001	4	3044 River Road, Conestoga, PA	S2540C-11	Total Dissolved Solids
The sample was originally run within hold time, but required further analysis that exceeded hold time.				
3002096001	5	3044 River Road, Conestoga, PA	S2540C-11	Total Dissolved Solids
The RPD associated with this sample was recovered at 22%. The RPD is outside method acceptance limits of 0-5%. The results used to calculate the RPD were 183 mg/L and 229 mg/L.				

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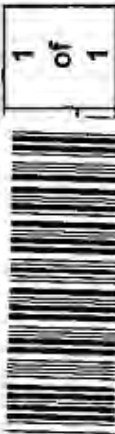
ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3002096 3044 RIVER ROAD

Lab ID	Sample ID	Analysis Method	Prep Method
3002096001	3044 River Road, Conestoga, PA	D6919-09	
3002096001	3044 River Road, Conestoga, PA	EPA 200.7	EPA ACID
3002096001	3044 River Road, Conestoga, PA	EPA 200.7	EPA TRMD
3002096001	3044 River Road, Conestoga, PA	EPA 300.0	
3002096001	3044 River Road, Conestoga, PA	EPA 410.4	
3002096001	3044 River Road, Conestoga, PA	EPA 420.4	420.4/9066
3002096001	3044 River Road, Conestoga, PA	Field	
3002096001	3044 River Road, Conestoga, PA	S2540C-11	
3002096001	3044 River Road, Conestoga, PA	S4500HB-11	
3002096001	3044 River Road, Conestoga, PA	SM2130B-2011	
3002096001	3044 River Road, Conestoga, PA	SM2320B-2011	
3002096001	3044 River Road, Conestoga, PA	SM2510B-2011	
3002096001	3044 River Road, Conestoga, PA	SM5310B-2011	
3002096001	3044 River Road, Conestoga, PA	SW846 8260B	
3002096001	3044 River Road, Conestoga, PA	SW846 9020B	

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1 of 1

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
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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#: LCSWMA - Quarterly
Bill To: Lancaster County Solid Waste MA

TAT Normal-Standard TAT is 10-12 business days.
 Rush-Subject to ALS approval and surcharges.
Date Required: _____ Approved By: _____
Email? -Y -N
Fax? -Y -N

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time
1 3044RIVERRD	11-21-10	12:45
2		
3		
4		
5		
6		
7		
8		
9		
10		

Container Type	AG	AM	AN	CG	PL	PL	PL	PL	PL	PL
40 ml	125 ml	250 ml	40 ml	500 ml	250 ml	250 ml	250 ml	250 ml	2 L	500 ml
HCl	H2SO4	H2SO4	HCl	H2SO4	HNO3	HNO3	HNO3	HNO3	None	None

Matrix	TOC	O-OH	TOX	SW846-8260 VOCs	FM	CH3-N, COD	Dissolved Metals: Ca, Fe, Mg, Mn, K, Na	K, Na	Metals: Ca, Fe, Mg, Mn, K, Na	PH, TDS, NO2, NO3, Cl, SO4, F, TP, SpC	Alkalinity, HCO3
G DW	2	1	2	3A	X	1	1	1	1	1	1

Enter Number of Containers Per Sample or Field Results Below.

ANALYSES/METHOD REQUESTED

Project Comments:
Relinquished By Company Name: *REDACTED*
Date: 11-21-10
Time: 12:45
Received By / Company Name: *Janice*
Date: 11/21/10
Time: 1:50

ALS Field Services: Pickup Labor
 Composite_Sampling Rental_Equipment
 Other:

Receipt Information: * 3 0 2 0 9 6 *
Cooler Temp: 5.6L Therm ID: 403
No. of Coolers: 1
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 #: _____
Sampler/COC Comments: _____
Data Deliverables: Standard CLP-like USACE
Special Processing: USACE Navy
State Samples Collected In: NY NJ PA NC
Reportable to PADEP? Yes No
Sample Disposal: Lab Special
PWSID #: _____
EDDS: Format Type: _____



December 10, 2018

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

Certificate of Analysis

Project Name:	CONTIGUOUS LANDOWNER- 3052 RIVER RD	Workorder:	3002097
Purchase Order:	PO1000126	Workorder ID:	3052 RIVER ROAD

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, November 21, 2018.

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

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

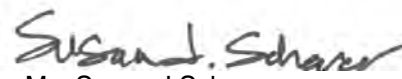
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

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

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

CC: Mr. Nicholas Rogers , Ms. Jordan Gallagher , Landowner , Mr. Jeff Musser

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


Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3002097 3052 RIVER ROAD

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3002097001	3052 River Road, Conestoga, PA	Water	11/21/2018 13:28	11/21/2018 18:41	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3002097 3052 RIVER ROAD

Notes

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

Standard Acronyms/Flags

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: 3002097 3052 RIVER ROAD

Lab ID: **3002097001** Date Collected: 11/21/2018 13:28 Matrix: Water
Sample ID: **3052 River Road, Conestoga, PA** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
Tetrachloroethene	ND	2,3	ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
Toluene	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
Total Xylenes	ND		ug/L	3.0	SW846 8260B			11/30/18 01:59	PDK	K
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
Trichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			11/30/18 01:59	PDK	K
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	78.4		%	62 - 133	SW846 8260B			11/30/18 01:59	PDK	K
4-Bromofluorobenzene (S)	114		%	79 - 114	SW846 8260B			11/30/18 01:59	PDK	K
Dibromofluoromethane (S)	82.4		%	78 - 116	SW846 8260B			11/30/18 01:59	PDK	K
Toluene-d8 (S)	91.2		%	76 - 127	SW846 8260B			11/30/18 01:59	PDK	K
WET CHEMISTRY										
Alkalinity, Bicarbonate	9		mg/L	5	SM2320B-2011			11/30/18 03:27	MSA	C
Alkalinity, Total	9	4	mg/L	5	SM2320B-2011			11/30/18 03:27	MSA	C
Ammonia-N	ND		mg/L	0.100	D6919-09			12/4/18 06:02	NJA	B
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			12/4/18 17:40	AK	B
Chloride	21.2		mg/L	2.0	EPA 300.0			11/22/18 12:49	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			11/22/18 12:49	CHW	C
Halogen, Total Organic (TOX)	ND		ug/L	20.0	SW846 9020B			12/3/18 12:28	PAG	I
Nitrate-N	17.3		mg/L	0.20	EPA 300.0			11/22/18 12:49	CHW	C
Nitrite-N	ND		mg/L	0.20	EPA 300.0			11/22/18 12:49	CHW	C
pH	6.03	1	pH_Units		S4500HB-11			11/28/18 09:14	MSA	C
Phenolics	ND		mg/L	0.005	EPA 420.4	11/30/18 15:59	C_D	12/3/18 14:10	C_D	H
Specific Conductance	227		umhos/cm	1	SM2510B-2011			11/28/18 09:14	MSA	C

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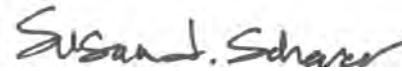
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ANALYTICAL RESULTS

Workorder: 3002097 3052 RIVER ROAD

Lab ID: **3002097001** Date Collected: 11/21/2018 13:28 Matrix: Water
Sample ID: **3052 River Road, Conestoga, PA** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Sulfate	ND		mg/L	2.0	EPA 300.0			11/22/18 12:49	CHW	C
Total Dissolved Solids	199	5	mg/L	5	S2540C-11			12/3/18 16:45	EXS	C
Total Organic Carbon (TOC)	0.64		mg/L	0.50	SM5310B-2011			12/6/18 09:56	PAG	F
Turbidity	0.96		NTU	0.10	SM2130B-2011			11/22/18 07:25	MBW	C
METALS										
Calcium, Total	15.2		mg/L	0.050	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:16	SRT	D3
Calcium, Dissolved	15.9		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:48	SRT	E
Iron, Total	ND		mg/L	0.030	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:16	SRT	D3
Iron, Dissolved	ND		mg/L	0.060	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:48	SRT	E
Magnesium, Total	7.4		mg/L	0.050	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:16	SRT	D3
Magnesium, Dissolved	7.9		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:48	SRT	E
Manganese, Total	0.026		mg/L	0.0025	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:16	SRT	D3
Manganese, Dissolved	0.027		mg/L	0.0050	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:48	SRT	E
Potassium, Total	1.4		mg/L	0.25	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:16	SRT	D3
Potassium, Dissolved	1.4		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:48	SRT	E
Sodium, Total	6.9		mg/L	0.25	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:16	SRT	D3
Sodium, Dissolved	7.4		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:48	SRT	E
FIELD PARAMETERS										
pH, Field (SM4500B)	6.10		pH_Units		Field			11/21/18 13:28	BGS	N
Specific Conductance, Field	231		umhos/cm	1	Field			11/21/18 13:28	BGS	N
Temperature	15.20		Deg. C		Field			11/21/18 13:28	BGS	N



Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3002097 3052 RIVER ROAD

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3002097001	1	3052 River Road, Conestoga, PA	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.				
3002097001	2	3052 River Road, Conestoga, PA	SW846 8260B	Tetrachloroethene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Tetrachloroethene. The % Recovery was reported as 135 and the control limits were 72 to 124.				
3002097001	3	3052 River Road, Conestoga, PA	SW846 8260B	Tetrachloroethene
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Tetrachloroethene. The % Recovery was reported as 133 and the control limits were 72 to 124.				
3002097001	4	3052 River Road, Conestoga, PA	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3002097001	5	3052 River Road, Conestoga, PA	S2540C-11	Total Dissolved Solids
The sample was originally run within hold time, but required further analysis that exceeded hold time.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3002097 3052 RIVER ROAD

Lab ID	Sample ID	Analysis Method	Prep Method
3002097001	3052 River Road, Conestoga, PA	D6919-09	
3002097001	3052 River Road, Conestoga, PA	EPA 200.7	EPA ACID
3002097001	3052 River Road, Conestoga, PA	EPA 200.7	EPA TRMD
3002097001	3052 River Road, Conestoga, PA	EPA 300.0	
3002097001	3052 River Road, Conestoga, PA	EPA 410.4	
3002097001	3052 River Road, Conestoga, PA	EPA 420.4	420.4/9066
3002097001	3052 River Road, Conestoga, PA	Field	
3002097001	3052 River Road, Conestoga, PA	S2540C-11	
3002097001	3052 River Road, Conestoga, PA	S4500HB-11	
3002097001	3052 River Road, Conestoga, PA	SM2130B-2011	
3002097001	3052 River Road, Conestoga, PA	SM2320B-2011	
3002097001	3052 River Road, Conestoga, PA	SM2510B-2011	
3002097001	3052 River Road, Conestoga, PA	SM5310B-2011	
3002097001	3052 River Road, Conestoga, PA	SW846 8260B	
3002097001	3052 River Road, Conestoga, PA	SW846 9020B	

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3002097*

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

Client Name: LCSWMA - Gerald E. Miller, Sr.
 Address: 3052 River Road
 Conestoga, PA 17516
 Contact: Gerald E. Miller, Sr.
 Phone#: (717) 872-5117

Project Name#: LCSWMA - Quarterly
 Bill To: Lancaster County Solid Waste MA

TAT Normal-Standard TAT is 10-12 business days.
 Rush-Subject to ALS approval and surcharges.
 Date Required: _____ Approved By: _____
 Email? -Y
 Fax? -Y No: _____

Container Type	AG	AN	AN	CG	PL	PL	PL	PL	PL	PL	PL	PL
Container Size	40 ml	125 ml	250 ml	40 ml	500 ml	250 ml	250 ml	250 ml	250 ml	2 L	500 ml	500 ml
Preservative	HCl	H2SO4	H2SO4	HCl	H2SO4	HNO3	HNO3	HNO3	HNO3	None	None	None

ANALYSES/METHOD REQUESTED

Matrix	TOC	O-OH	TOX	FM	NH3-N, COD	Dissolved Metals: Ca, Fe, Mg, Mn, K, Na	Metals: Ca, Fe, Mg, Mn, K, Na	PH, TDS, NO2, NO3, Cl, SO4, F, Pb, SPC	Alkalinity, HCO3
G DW	2	1	2	X	1	1	1	1	1

Enter Number of Containers Per Sample or Field Results Below.

Sample Date	Time	Sample Description/Location (as it will appear on the lab report)	ALS Field Services: <input type="checkbox"/> Pickup <input type="checkbox"/> Labor <input type="checkbox"/> Composite_Sampling <input type="checkbox"/> Rental_Equipment <input type="checkbox"/> Other:
11-21-18	1328	13052RIVERROD	
2			
3			
4			
5			
6			
7			
8			
9			
10			

Project Comments:	LOGGED BY (signature):	REVIEWED BY (signature):	Date	Time	Received By / Company Name	Date	Time
			11/21/18	1328	Gerald E. Miller, Sr.	11/18/18	1834

ALS Field Services: Pickup Labor Composite_Sampling Rental_Equipment Other:

Special Processing: Standard CLP-like USACE Navy USACE State Samples Collected In

Reportable to PADEP? Yes No PWSID # _____ EDDS: Format Type: _____



December 10, 2018

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:	3002099
Purchase Order:	PO1000126	Workorder ID:	4TH QTR 2018 3056 RIVER RD

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, November 21, 2018.

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.

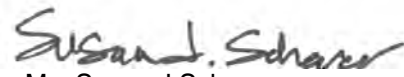
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

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CC: Mr. Nicholas Rogers , Ms. Jordan Gallagher , Mr. Jeff Musser

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Ms. Susan J Scherer
Project Coordinator

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Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey



SAMPLE SUMMARY

Workorder: 3002099 4TH QTR 2018 3056 RIVER RD

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3002099001	3056RIVERRD	Water	11/21/2018 13:40	11/21/2018 18:41	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3002099 4TH QTR 2018 3056 RIVER RD

Notes

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

Standard Acronyms/Flags

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: 3002099 4TH QTR 2018 3056 RIVER RD

Lab ID: **3002099001** Date Collected: 11/21/2018 13:40 Matrix: Water
Sample ID: **3056RIVERRD** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
Toluene	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
Total Xylenes	ND		ug/L	3.0	SW846 8260B			11/30/18 02:21	PDK	K
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
Trichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			11/30/18 02:21	PDK	K
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	75.9		%	62 - 133	SW846 8260B			11/30/18 02:21	PDK	K
4-Bromofluorobenzene (S)	111		%	79 - 114	SW846 8260B			11/30/18 02:21	PDK	K
Dibromofluoromethane (S)	80.5		%	78 - 116	SW846 8260B			11/30/18 02:21	PDK	K
Toluene-d8 (S)	89.5		%	76 - 127	SW846 8260B			11/30/18 02:21	PDK	K
WET CHEMISTRY										
Alkalinity, Bicarbonate	7		mg/L	5	SM2320B-2011			11/28/18 09:50	MSA	C
Alkalinity, Total	7	1	mg/L	5	SM2320B-2011			11/28/18 09:50	MSA	C
Ammonia-N	ND		mg/L	0.100	D6919-09			12/3/18 17:57	NJA	B
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			12/4/18 17:40	AK	B
Chloride	25.1		mg/L	2.0	EPA 300.0			11/22/18 13:01	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			11/22/18 13:01	CHW	C
Halogen, Total Organic (TOX)	ND		ug/L	20.0	SW846 9020B			12/3/18 13:01	PAG	I
Nitrate-N	18.3		mg/L	0.20	EPA 300.0			11/22/18 13:01	CHW	C
Nitrite-N	ND		mg/L	0.20	EPA 300.0			11/22/18 13:01	CHW	C
pH	5.78	2	pH_Units		S4500HB-11			11/28/18 09:50	MSA	C
Phenolics	ND		mg/L	0.005	EPA 420.4	11/30/18 15:59	C_D	12/3/18 14:10	C_D	H
Specific Conductance	228		umhos/cm	1	SM2510B-2011			11/28/18 09:50	MSA	C

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ANALYTICAL RESULTS

Workorder: 3002099 4TH QTR 2018 3056 RIVER RD

Lab ID: **3002099001** Date Collected: 11/21/2018 13:40 Matrix: Water
 Sample ID: **3056RIVERRD** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Sulfate	ND		mg/L	2.0	EPA 300.0			11/22/18 13:01	CHW	C
Total Dissolved Solids	178	3	mg/L	5	S2540C-11			12/3/18 16:45	EXS	C
Total Organic Carbon (TOC)	ND		mg/L	0.50	SM5310B-2011			12/6/18 15:02	PAG	F
Turbidity	ND		NTU	0.10	SM2130B-2011			11/22/18 07:25	MBW	C
METALS										
Calcium, Total	9.7		mg/L	0.050	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:20	SRT	D3
Calcium, Dissolved	10.0		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:51	SRT	E
Iron, Total	ND		mg/L	0.030	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:20	SRT	D3
Iron, Dissolved	ND		mg/L	0.060	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:51	SRT	E
Magnesium, Total	12.0		mg/L	0.050	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:20	SRT	D3
Magnesium, Dissolved	12.7		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:51	SRT	E
Manganese, Total	0.097		mg/L	0.0025	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:20	SRT	D3
Manganese, Dissolved	0.10		mg/L	0.0050	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:51	SRT	E
Potassium, Total	1.9		mg/L	0.25	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:20	SRT	D3
Potassium, Dissolved	1.8		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:51	SRT	E
Sodium, Total	7.2		mg/L	0.25	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:20	SRT	D3
Sodium, Dissolved	7.7		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:51	SRT	E
FIELD PARAMETERS										
pH, Field (SM4500B)	5.89		pH_Units		Field			11/21/18 13:40	BGS	N
Specific Conductance, Field	232		umhos/cm	1	Field			11/21/18 13:40	BGS	N
Temperature	15.30		Deg. C		Field			11/21/18 13:40	BGS	N

Susan J. Scherer
 Ms. Susan J Scherer
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3002099 4TH QTR 2018 3056 RIVER RD

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3002099001	1	3056RIVERRD	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3002099001	2	3056RIVERRD	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.				
3002099001	3	3056RIVERRD	S2540C-11	Total Dissolved Solids
The sample was originally run within hold time, but required further analysis that exceeded hold time.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3002099 4TH QTR 2018 3056 RIVER RD

Lab ID	Sample ID	Analysis Method	Prep Method
3002099001	3056RIVERRD	D6919-09	
3002099001	3056RIVERRD	EPA 200.7	EPA ACID
3002099001	3056RIVERRD	EPA 200.7	EPA TRMD
3002099001	3056RIVERRD	EPA 300.0	
3002099001	3056RIVERRD	EPA 410.4	
3002099001	3056RIVERRD	EPA 420.4	420.4/9066
3002099001	3056RIVERRD	Field	
3002099001	3056RIVERRD	S2540C-11	
3002099001	3056RIVERRD	S4500HB-11	
3002099001	3056RIVERRD	SM2130B-2011	
3002099001	3056RIVERRD	SM2320B-2011	
3002099001	3056RIVERRD	SM2510B-2011	
3002099001	3056RIVERRD	SM5310B-2011	
3002099001	3056RIVERRD	SW846 8260B	
3002099001	3056RIVERRD	SW846 9020B	

ALS Environmental Laboratory Locations Across North America

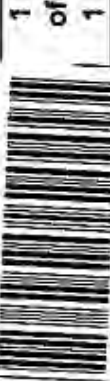
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34 Dogwood Lane • Middletown, PA 17057 • T: 717.344.5541 • F: 717.344.1430

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ALS



1 of 1

3 0 0 2 0 9 9 *

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#: LCSWMA - Quarterly
 Bill To: Lancaster County Solid Waste MA

TAT Normal-Standard TAT is 10-12 business days.
 Rush-Subject to ALS approval and surcharges.
 Date Required: _____ Approved By: _____
 Email? .Y No.
 Fax? .Y No.

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

Receipt Information (optional)iving Lab)
 Cooler Temp: 6.1 Therm ID: 405
 No. of Coolers: 1 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?
 Homogenize/Alicates?
 Courier Tracking #: _____
 Sample/COC Comments

ANALYSES/METHOD REQUESTED									
Container Type	AG	AN	AN	CG	PL	PL	PL	PL	PL
40 ml	H2SO4	H2SO4	HCl	40 ml	500 ml	250 ml	250 ml	250 ml	500 ml
Preservative	HCl	H2SO4	HCl	H2SO4	HNO3	HNO3	HNO3	HNO3	None
Matrix	TOC	O-OH	TOX	SW846-8260 VOCs	FM	NH3-N, COD	Dissolved Metals: Ca, Fe, Mg, Mn, K, Na	K, Na	Metals: Ca, Fe, Mg, Mn, K, Na
							PH, TDS, NO2, NO3, Cl, SO4, F, Pb, Spc		Alkalinity, HCO3

Sample No.	Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	Enter Number of Containers Per Sample or Field Results Below.																
				G	DW	2	1	2	2	1	1	1	1							
1	3056RIVERRD	11-21-19	0940																	
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Project Comments:

Relinquished By / Company Name: *Mark Reider ALS*

Date: 11-20-19 1341 2

Time: 11:41 AM 184

Received By / Company Name: *Mark Reider*

Date: 11/21/19 1344

Time: 1:34 PM 184

LOGGED BY (signature): _____

REVIEWED BY (signature): _____

ALS Field Services: Pickup Labor
 Composite_Sampling Rental_Equipment
 Other:

Standard CLP-like USACE Navy State Samples Collected In

Deliverables: USACE Navy NY NJ PA NC

Reportable to PADEP? Yes No Lab Special

PWSID # _____ EDDS: Format Type: _____

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

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



December 6, 2018

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:	3001522
Purchase Order:	PO1000126	Workorder ID:	4TH QTR 2018 3060 RIVER RD

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, November 20, 2018.

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.

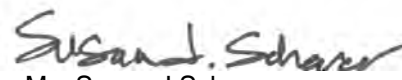
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

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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.


Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3001522 4TH QTR 2018 3060 RIVER RD

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3001522001	3060RIVERRD	Water	11/20/2018 11:03	11/20/2018 17:44	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3001522 4TH QTR 2018 3060 RIVER RD

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.
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- 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".
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U	Indicates that the analyte was Not Detected (ND)
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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: 3001522 4TH QTR 2018 3060 RIVER RD

Lab ID: **3001522001** Date Collected: 11/20/2018 11:03 Matrix: Water
Sample ID: **3060RIVERRD** Date Received: 11/20/2018 17:44

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
Toluene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
Total Xylenes	ND		ug/L	3.0	SW846 8260B			11/29/18 18:01	DD	K
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
Trichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			11/29/18 18:01	DD	K
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	78.5		%	62 - 133	SW846 8260B			11/29/18 18:01	DD	K
4-Bromofluorobenzene (S)	113		%	79 - 114	SW846 8260B			11/29/18 18:01	DD	K
Dibromofluoromethane (S)	83.7		%	78 - 116	SW846 8260B			11/29/18 18:01	DD	K
Toluene-d8 (S)	91.4		%	76 - 127	SW846 8260B			11/29/18 18:01	DD	K
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND		mg/L	5	SM2320B-2011			11/22/18 07:47	MBW	C
Alkalinity, Total	ND	1	mg/L	5	SM2320B-2011			11/22/18 07:47	MBW	C
Ammonia-N	0.599		mg/L	0.100	D6919-09			11/29/18 03:05	CMM	B
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			12/1/18 15:31	AK	B
Chloride	22.7		mg/L	2.0	EPA 300.0			11/21/18 07:29	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			11/21/18 07:29	CHW	C
Halogen, Total Organic (TOX)	ND		ug/L	20.0	SW846 9020B			11/30/18 14:43	PAG	I
Nitrate-N	19.1		mg/L	0.20	EPA 300.0			11/21/18 07:29	CHW	C
Nitrite-N	ND		mg/L	0.20	EPA 300.0			11/21/18 07:29	CHW	C
pH	5.03	2	pH_Units		S4500HB-11			11/22/18 07:47	MBW	C
Phenolics	ND		mg/L	0.005	EPA 420.4	11/28/18 15:56	C_D	11/29/18 06:28	C_D	H
Specific Conductance	242		umhos/cm	1	SM2510B-2011			11/22/18 07:47	MBW	C

ALS Environmental Laboratory Locations Across North America

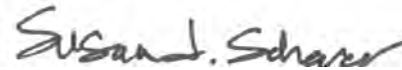
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ANALYTICAL RESULTS

Workorder: 3001522 4TH QTR 2018 3060 RIVER RD

Lab ID: **3001522001** Date Collected: 11/20/2018 11:03 Matrix: Water
Sample ID: **3060RIVERRD** Date Received: 11/20/2018 17:44

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Sulfate	14.8		mg/L	2.0	EPA 300.0			11/21/18 07:29	CHW	C
Total Dissolved Solids	244		mg/L	5	S2540C-11			11/27/18 12:35	EXS	C
Total Organic Carbon (TOC)	ND		mg/L	0.50	SM5310B-2011			12/5/18 06:49	PAG	F
Turbidity	ND		NTU	0.10	SM2130B-2011			11/22/18 07:05	MBW	C
METALS										
Calcium, Total	12.6		mg/L	0.050	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:14	SRT	D1
Calcium, Dissolved	12.7		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:08	SRT	E
Iron, Total	ND		mg/L	0.030	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:14	SRT	D1
Iron, Dissolved	ND		mg/L	0.060	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:08	SRT	E
Magnesium, Total	11.7		mg/L	0.050	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:14	SRT	D1
Magnesium, Dissolved	11.1		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:08	SRT	E
Manganese, Total	0.14		mg/L	0.0025	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:14	SRT	D1
Manganese, Dissolved	0.13		mg/L	0.0050	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:08	SRT	E
Potassium, Total	2.9		mg/L	0.25	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:14	SRT	D1
Potassium, Dissolved	2.7		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:08	SRT	E
Sodium, Total	7.8		mg/L	0.25	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:14	SRT	D1
Sodium, Dissolved	7.4		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:08	SRT	E
FIELD PARAMETERS										
pH, Field (SM4500B)	5.21		pH_Units		Field			11/20/18 11:03	BGS	M
Specific Conductance, Field	238		umhos/cm	1	Field			11/20/18 11:03	BGS	M
Temperature	15.10		Deg. C		Field			11/20/18 11:03	BGS	M


Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3001522 4TH QTR 2018 3060 RIVER RD

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3001522001	1	3060RIVERRD	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3001522001	2	3060RIVERRD	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.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3001522 4TH QTR 2018 3060 RIVER RD

Lab ID	Sample ID	Analysis Method	Prep Method
3001522001	3060RIVERRD	D6919-09	
3001522001	3060RIVERRD	EPA 200.7	EPA ACID
3001522001	3060RIVERRD	EPA 200.7	EPA TRMD
3001522001	3060RIVERRD	EPA 300.0	
3001522001	3060RIVERRD	EPA 410.4	
3001522001	3060RIVERRD	EPA 420.4	420.4/9066
3001522001	3060RIVERRD	Field	
3001522001	3060RIVERRD	S2540C-11	
3001522001	3060RIVERRD	S4500HB-11	
3001522001	3060RIVERRD	SM2130B-2011	
3001522001	3060RIVERRD	SM2320B-2011	
3001522001	3060RIVERRD	SM2510B-2011	
3001522001	3060RIVERRD	SM5310B-2011	
3001522001	3060RIVERRD	SW846 8260B	
3001522001	3060RIVERRD	SW846 9020B	

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**CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS**



1 of 1

34 Dogwood Lane • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430
 14 Dogwood Lane • Middletown, PA 17057 • Phone: 717.944.5541 • Fax: 717.944.1430

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

Contact: Mark Reider
 Phone#: (717) 735-0193
 Project Name#: LCSWMA - Quarterly
 Bill To: Lancaster County Solid Waste MA

TAT Normal-Standard TAT is 10-12 business days.
 Rush-Subject to ALS approval and surcharges.
 Date Required: _____ Approved By: _____
 Email? -Y -N
 Fax? -Y -N

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

Sample No.	Sample Description/Location	Sample Date	Time	Matrix	TOC	O-OH	TOX	NH3-N, COD	Dissolved Metals: Ca, Fe, Mg, Mn, K, Na	Metals: Ca, Fe, Mg, Mn, K, Na	pH, TDS, NO2, NO3, Cl, SO4, F, Pb, Spc	Alkalinity, HCO3
1	3060DRIVERD	12-20-18	1103	G DW	2	1	2	1	1	1	1	1
2												
3												
4												
5												
6												
7												
8												
9												
10												

Project Comments:
 Relinquished By / Company Name: [Signature]
 Date: 12/20/18
 Received By / Company Name: [Signature]
 Date: 11/20/2018
 Time: 1744

LOGGED BY (signature): [Signature] 11/21/18 10107
 REVIEWED BY (signature): [Signature]

ALS Field Services: Pickup Labor
 Composite_Sampling Rental_Equipment
 Other:

Special Processing: USACE Navy
 State Samples Collected In: NY NJ PA NC

Reportable to PADEP? Yes No
 PWSID #: _____
 EDDS: Formel Type: _____

* G=Grab; C=Composite **Matrix - Air=DW=Drinking Water; GW=Groundwater; Oil=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
 ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057



December 10, 2018

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

Certificate of Analysis

Project Name:	CONTIGUOUS LANDOWNER- 3076 RIVER RD	Workorder:	3002133
Purchase Order:	PO1000126	Workorder ID:	LCSWMA-Qaurterly

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, November 21, 2018.

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

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

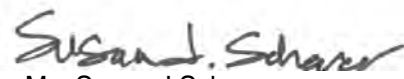
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

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

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

CC: Mr. Nicholas Rogers , Ms. Jordan Gallagher , Landowner , Mr. Jeff Musser

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


Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3002133 LCSWMA-Quarterly

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3002133001	3076 River Road, Conestoga, PA	Water	11/21/2018 11:55	11/21/2018 18:41	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3002133 LCSWMA-Quarterly

Notes

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

Standard Acronyms/Flags

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: 3002133 LCSWMA-Quarterly

Lab ID: **3002133001** Date Collected: 11/21/2018 11:55 Matrix: Water
Sample ID: **3076 River Road, Conestoga, PA** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
Toluene	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
Total Xylenes	ND		ug/L	3.0	SW846 8260B			11/30/18 03:26	PDK	K
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
Trichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			11/30/18 03:26	PDK	K
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	81.2		%	62 - 133	SW846 8260B			11/30/18 03:26	PDK	K
4-Bromofluorobenzene (S)	115	3	%	79 - 114	SW846 8260B			11/30/18 03:26	PDK	K
Dibromofluoromethane (S)	82.7		%	78 - 116	SW846 8260B			11/30/18 03:26	PDK	K
Toluene-d8 (S)	89		%	76 - 127	SW846 8260B			11/30/18 03:26	PDK	K
WET CHEMISTRY										
Alkalinity, Bicarbonate	9		mg/L	5	SM2320B-2011			11/28/18 11:23	MSA	C
Alkalinity, Total	9	1	mg/L	5	SM2320B-2011			11/28/18 11:23	MSA	C
Ammonia-N	ND		mg/L	0.100	D6919-09			12/4/18 07:02	NJA	B
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			12/4/18 17:40	AK	B
Chloride	44.0		mg/L	2.0	EPA 300.0			11/22/18 13:13	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			11/22/18 13:13	CHW	C
Halogen, Total Organic (TOX)	ND		ug/L	20.0	SW846 9020B			12/3/18 14:06	PAG	I
Nitrate-N	10.9		mg/L	0.20	EPA 300.0			11/22/18 13:13	CHW	C
Nitrite-N	ND		mg/L	0.20	EPA 300.0			11/22/18 13:13	CHW	C
pH	5.86	2	pH_Units		S4500HB-11			11/28/18 11:23	MSA	C
Phenolics	ND		mg/L	0.005	EPA 420.4	11/30/18 15:59	C_D	12/3/18 14:10	C_D	H
Specific Conductance	283		umhos/cm	1	SM2510B-2011			11/28/18 11:23	MSA	C

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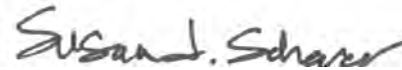
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ANALYTICAL RESULTS

Workorder: 3002133 LCSWMA-Quarterly

Lab ID: **3002133001** Date Collected: 11/21/2018 11:55 Matrix: Water
Sample ID: **3076 River Road, Conestoga, PA** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Sulfate	14.7		mg/L	2.0	EPA 300.0			11/22/18 13:13	CHW	C
Total Dissolved Solids	227	4	mg/L	5	S2540C-11			12/3/18 16:45	EXS	C
Total Organic Carbon (TOC)	0.59		mg/L	0.50	SM5310B-2011			12/6/18 15:02	PAG	F
Turbidity	ND		NTU	0.10	SM2130B-2011			11/22/18 07:25	MBW	C
METALS										
Calcium, Total	14.2		mg/L	0.050	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:24	SRT	D3
Calcium, Dissolved	14.7		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:55	SRT	E
Iron, Total	ND		mg/L	0.030	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:24	SRT	D3
Iron, Dissolved	ND		mg/L	0.060	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:55	SRT	E
Magnesium, Total	8.6		mg/L	0.050	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:24	SRT	D3
Magnesium, Dissolved	9.1		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:55	SRT	E
Manganese, Total	0.18		mg/L	0.0025	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:24	SRT	D3
Manganese, Dissolved	0.19		mg/L	0.0050	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:55	SRT	E
Potassium, Total	2.9		mg/L	0.25	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:24	SRT	D3
Potassium, Dissolved	3.2		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:55	SRT	E
Sodium, Total	18.9		mg/L	0.25	EPA 200.7	11/30/18 10:00	BMK	12/4/18 23:24	SRT	D3
Sodium, Dissolved	20.3		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:55	SRT	E
FIELD PARAMETERS										
pH, Field (SM4500B)	6.13		pH_Units		Field			11/21/18 11:55	BGS	M
Specific Conductance, Field	298		umhos/cm	1	Field			11/21/18 11:55	BGS	M
Temperature	15.30		Deg. C		Field			11/21/18 11:55	BGS	M



Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3002133 LCSWMA-Quarterly

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3002133001	1	3076 River Road, Conestoga, PA	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3002133001	2	3076 River Road, Conestoga, PA	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.				
3002133001	3	3076 River Road, Conestoga, PA	SW846 8260B	4-Bromofluorobenzene
The surrogate 4-Bromofluorobenzene for method SW846 8260B was outside of control limits. The % Recovery was reported as 115 and the control limits were 79 to 114. This result was reported at a dilution of 1.				
3002133001	4	3076 River Road, Conestoga, PA	S2540C-11	Total Dissolved Solids
The sample was originally run within hold time, but required further analysis that exceeded hold time.				

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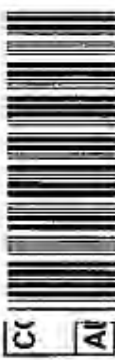
ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3002133 LCSWMA-Quarterly

Lab ID	Sample ID	Analysis Method	Prep Method
3002133001	3076 River Road, Conestoga, PA	D6919-09	
3002133001	3076 River Road, Conestoga, PA	EPA 200.7	EPA ACID
3002133001	3076 River Road, Conestoga, PA	EPA 200.7	EPA TRMD
3002133001	3076 River Road, Conestoga, PA	EPA 300.0	
3002133001	3076 River Road, Conestoga, PA	EPA 410.4	
3002133001	3076 River Road, Conestoga, PA	EPA 420.4	420.4/9066
3002133001	3076 River Road, Conestoga, PA	Field	
3002133001	3076 River Road, Conestoga, PA	S2540C-11	
3002133001	3076 River Road, Conestoga, PA	S4500HB-11	
3002133001	3076 River Road, Conestoga, PA	SM2130B-2011	
3002133001	3076 River Road, Conestoga, PA	SM2320B-2011	
3002133001	3076 River Road, Conestoga, PA	SM2510B-2011	
3002133001	3076 River Road, Conestoga, PA	SM5310B-2011	
3002133001	3076 River Road, Conestoga, PA	SW846 8260B	
3002133001	3076 River Road, Conestoga, PA	SW846 9020B	

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

3A Dogwood Lane • Middletown, PA 17057 • Fax: 717.944.5541 • Fax: 717.944.1430

Client Name: LCSWMA - Brian Sensenich
 Address: 3076 Rover Road
 Conestoga, PA 17516
 Contact: Brian Sensenich
 Phone#: (717) 676-5779

Project Name#: LCSWMA - Quarterly
 Bill To: LCSWMA - Brian Sensenich

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

Date Required: _____ Approved By: _____
 Email? -Y -N
 Fax? -Y -N

Sample Date	Time	Sample Description/Location (as it will appear on the lab report)
11-24-18	1:03	3076 RIVER RD
2		
3		
4		
5		
6		
7		
8		
9		
10		

Container Type	AG	AN	AN	CG	PL	PL	PL	PL	PL	PL	PL	ANALYSES/METHOD REQUESTED	
												FM	SWB46-8260 VOCs
Container Size	40 ml	125 ml	250 ml	40 ml	500 ml	250 ml	250 ml	250 ml	2 L	500 ml	None	Alkalinity, HCO3	
Preservative	HCl	H2SO4	H2SO4	HCl	H2SO4	HNO3	HNO3	HNO3	None	None	None	PH, TDS, NO2, NO3, Cl, SO4, F, TB, SpC	
												Metals: Ca, Fe, Mg, Mn, K, Na	
												Dissolved Metals: Ca, Fe, Mg, Mn, K, Na	

Enter Number of Containers Per Sample or Field Results Below.

Matrix	G	or	C	1	2	3	4	5	6	7	8	9	10
DW	2			1	2	2	1	1	1	1	1	1	1

Project Comments: _____

LOGGED BY (signature): _____

REVIEWED BY (signature): _____

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
Brian Sensenich ALS	11-24-18	1:03	[Signature]		

ALS Field Services: Pickup Labor
 Composite_Sampling Rental_Equipment
 Other:

Special Processing: USACE Navy State Samples Collected In: NY NJ PA NC

Reportable to PADEP? Yes No PWSID # _____ EDDS: Format Type: _____



December 6, 2018

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:	3001521
Purchase Order:	PO1000126	Workorder ID:	4TH QTR 2018 3079 RIVER RD

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, November 20, 2018.

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

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

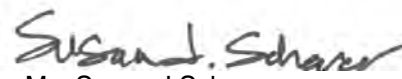
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

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

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

CC: 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.


Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3001521 4TH QTR 2018 3079 RIVER RD

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3001521001	3079RIVERRD	Water	11/20/2018 11:39	11/20/2018 17:44	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3001521 4TH QTR 2018 3079 RIVER RD

Notes

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

Standard Acronyms/Flags

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: 3001521 4TH QTR 2018 3079 RIVER RD

Lab ID: **3001521001** Date Collected: 11/20/2018 11:39 Matrix: Water
Sample ID: **3079RIVERRD** Date Received: 11/20/2018 17:44

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
Toluene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
Total Xylenes	ND		ug/L	3.0	SW846 8260B			11/29/18 18:23	DD	K
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
Trichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			11/29/18 18:23	DD	K
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	79.8		%	62 - 133	SW846 8260B			11/29/18 18:23	DD	K
4-Bromofluorobenzene (S)	109		%	79 - 114	SW846 8260B			11/29/18 18:23	DD	K
Dibromofluoromethane (S)	84.7		%	78 - 116	SW846 8260B			11/29/18 18:23	DD	K
Toluene-d8 (S)	89.1		%	76 - 127	SW846 8260B			11/29/18 18:23	DD	K
WET CHEMISTRY										
Alkalinity, Bicarbonate	26		mg/L	5	SM2320B-2011			11/22/18 07:38	MBW	C
Alkalinity, Total	26	1	mg/L	5	SM2320B-2011			11/22/18 07:38	MBW	C
Ammonia-N	0.150		mg/L	0.100	D6919-09			11/29/18 02:50	CMM	B
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			12/1/18 15:31	AK	B
Chloride	31.3		mg/L	2.0	EPA 300.0			11/21/18 06:15	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			11/21/18 06:15	CHW	C
Halogen, Total Organic (TOX)	ND		ug/L	20.0	SW846 9020B			11/30/18 14:09	PAG	I
Nitrate-N	ND		mg/L	0.20	EPA 300.0			11/21/18 06:15	CHW	C
Nitrite-N	ND		mg/L	0.20	EPA 300.0			11/21/18 06:15	CHW	C
pH	6.13	2	pH_Units		S4500HB-11			11/22/18 07:38	MBW	C
Phenolics	ND		mg/L	0.005	EPA 420.4	11/28/18 15:56	C_D	11/29/18 06:28	C_D	H
Specific Conductance	172		umhos/cm	1	SM2510B-2011			11/22/18 07:38	MBW	C

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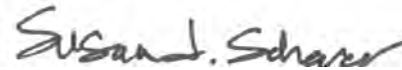
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ANALYTICAL RESULTS

Workorder: 3001521 4TH QTR 2018 3079 RIVER RD

Lab ID: **3001521001** Date Collected: 11/20/2018 11:39 Matrix: Water
Sample ID: **3079RIVERRD** Date Received: 11/20/2018 17:44

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Sulfate	15.5		mg/L	2.0	EPA 300.0			11/21/18 06:15	CHW	C
Total Dissolved Solids	84		mg/L	5	S2540C-11			11/27/18 12:35	EXS	C
Total Organic Carbon (TOC)	0.54		mg/L	0.50	SM5310B-2011			12/5/18 06:49	PAG	F
Turbidity	ND		NTU	0.10	SM2130B-2011			11/22/18 07:05	MBW	C
METALS										
Calcium, Total	9.4		mg/L	0.050	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:10	SRT	D1
Calcium, Dissolved	9.5		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:05	SRT	E
Iron, Total	ND		mg/L	0.030	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:10	SRT	D1
Iron, Dissolved	ND		mg/L	0.060	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:05	SRT	E
Magnesium, Total	5.7		mg/L	0.050	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:10	SRT	D1
Magnesium, Dissolved	5.3		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:05	SRT	E
Manganese, Total	0.21		mg/L	0.0025	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:10	SRT	D1
Manganese, Dissolved	0.20		mg/L	0.0050	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:05	SRT	E
Potassium, Total	1.9		mg/L	0.25	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:10	SRT	D1
Potassium, Dissolved	1.8		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:05	SRT	E
Sodium, Total	12.1		mg/L	0.25	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:10	SRT	D1
Sodium, Dissolved	11.6		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:05	SRT	E
FIELD PARAMETERS										
pH, Field (SM4500B)	6.07		pH_Units		Field			11/20/18 11:39	BGS	M
Specific Conductance, Field	184		umhos/cm	1	Field			11/20/18 11:39	BGS	M
Temperature	15.30		Deg. C		Field			11/20/18 11:39	BGS	M


Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3001521 4TH QTR 2018 3079 RIVER RD

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3001521001	1	3079RIVERRD	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3001521001	2	3079RIVERRD	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.				

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 Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3001521 4TH QTR 2018 3079 RIVER RD

Lab ID	Sample ID	Analysis Method	Prep Method
3001521001	3079RIVERRD	D6919-09	
3001521001	3079RIVERRD	EPA 200.7	EPA ACID
3001521001	3079RIVERRD	EPA 200.7	EPA TRMD
3001521001	3079RIVERRD	EPA 300.0	
3001521001	3079RIVERRD	EPA 410.4	
3001521001	3079RIVERRD	EPA 420.4	420.4/9066
3001521001	3079RIVERRD	Field	
3001521001	3079RIVERRD	S2540C-11	
3001521001	3079RIVERRD	S4500HB-11	
3001521001	3079RIVERRD	SM2130B-2011	
3001521001	3079RIVERRD	SM2320B-2011	
3001521001	3079RIVERRD	SM2510B-2011	
3001521001	3079RIVERRD	SM5310B-2011	
3001521001	3079RIVERRD	SW846 8260B	
3001521001	3079RIVERRD	SW846 9020B	

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December 6, 2018

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

Certificate of Analysis

Project Name:	CONTIGUOUS LANDOWNER- 3088 RIVER RD	Workorder:	3001517
Purchase Order:	PO1000126	Workorder ID:	4TH QTR 2018-3088 RIVER RD

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, November 20, 2018.

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.

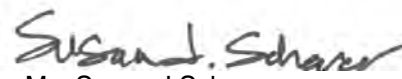
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

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CC: Mr. Nicholas Rogers , Ms. Jordan Gallagher , Landowner , Mr. Jeff Musser

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Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3001517 4TH QTR 2018-3088 RIVER RD

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3001517001	3088 River Road, Conestoga PA	Water	11/20/2018 09:31	11/20/2018 17:44	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3001517 4TH QTR 2018-3088 RIVER RD

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.
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LOD	DoD Limit of Detection
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ANALYTICAL RESULTS

Workorder: 3001517 4TH QTR 2018-3088 RIVER RD

 Lab ID: **3001517001** Date Collected: 11/20/2018 09:31 Matrix: Water
 Sample ID: **3088 River Road, Conestoga PA** Date Received: 11/20/2018 17:44

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
WET CHEMISTRY										
Alkalinity, Bicarbonate	143		mg/L	5	SM2320B-2011			11/22/18 07:22	MBW	C
Alkalinity, Total	143	1	mg/L	5	SM2320B-2011			11/22/18 07:22	MBW	C
Ammonia-N	ND		mg/L	0.100	D6919-09			11/29/18 02:21	CMM	B
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			12/1/18 15:31	AK	B
Chloride	241		mg/L	5.0	EPA 300.0			11/27/18 13:49	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			11/21/18 15:45	CHW	C
Halogen, Total Organic (TOX)	ND		ug/L	20.0	SW846 9020B			11/30/18 12:26	PAG	I
Nitrate-N	12.0		mg/L	0.20	EPA 300.0			11/21/18 15:45	CHW	C
Nitrite-N	ND		mg/L	0.20	EPA 300.0			11/21/18 15:45	CHW	C
pH	7.22	2	pH_Units		S4500HB-11			11/22/18 07:22	MBW	C
Phenolics	ND		mg/L	0.005	EPA 420.4	11/28/18 15:56	C_D	11/29/18 06:28	C_D	H
Specific Conductance	1220		umhos/cm	1	SM2510B-2011			11/22/18 07:22	MBW	C
Sulfate	35.8		mg/L	2.0	EPA 300.0			11/21/18 15:45	CHW	C
Total Dissolved Solids	1250		mg/L	5	S2540C-11			11/27/18 12:35	EXS	C
Total Organic Carbon (TOC)	1.3		mg/L	0.50	SM5310B-2011			12/5/18 06:49	PAG	F
Turbidity	ND		NTU	0.10	SM2130B-2011			11/22/18 07:05	MBW	C
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
Toluene	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
Total Xylenes	ND		ug/L	3.0	SW846 8260B			11/29/18 19:07	DD	K
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
Trichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			11/29/18 19:07	DD	K
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>

ALS Environmental Laboratory Locations Across North America

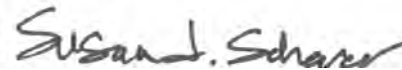
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ANALYTICAL RESULTS

Workorder: 3001517 4TH QTR 2018-3088 RIVER RD

Lab ID: **3001517001** Date Collected: 11/20/2018 09:31 Matrix: Water
Sample ID: **3088 River Road, Conestoga PA** Date Received: 11/20/2018 17:44

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
1,2-Dichloroethane-d4 (S)	79.1		%	62 - 133	SW846 8260B			11/29/18 19:07	DD	K
4-Bromofluorobenzene (S)	109		%	79 - 114	SW846 8260B			11/29/18 19:07	DD	K
Dibromofluoromethane (S)	83.1		%	78 - 116	SW846 8260B			11/29/18 19:07	DD	K
Toluene-d8 (S)	89.8		%	76 - 127	SW846 8260B			11/29/18 19:07	DD	K
METALS										
Calcium, Total	0.13		mg/L	0.050	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:03	SRT	D1
Calcium, Dissolved	0.14		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	11/29/18 16:57	SRT	E
Iron, Total	ND		mg/L	0.030	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:03	SRT	D1
Iron, Dissolved	ND		mg/L	0.060	EPA 200.7	11/27/18 13:55	SRT	11/29/18 16:57	SRT	E
Magnesium, Total	0.083		mg/L	0.050	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:03	SRT	D1
Magnesium, Dissolved	ND		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	11/29/18 16:57	SRT	E
Manganese, Total	ND		mg/L	0.0025	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:03	SRT	D1
Manganese, Dissolved	ND		mg/L	0.0050	EPA 200.7	11/27/18 13:55	SRT	11/29/18 16:57	SRT	E
Potassium, Total	3.3		mg/L	0.25	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:03	SRT	D1
Potassium, Dissolved	3.0		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	11/29/18 16:57	SRT	E
Sodium, Total	235		mg/L	0.25	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:03	SRT	D1
Sodium, Dissolved	231		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	11/29/18 16:57	SRT	E
FIELD PARAMETERS										
pH, Field (SM4500B)	7.09		pH_Units		Field			11/20/18 09:31	BGS	M
Specific Conductance, Field	1180		umhos/cm	1	Field			11/20/18 09:31	BGS	M
Temperature	15.60		Deg. C		Field			11/20/18 09:31	BGS	M



Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3001517 4TH QTR 2018-3088 RIVER RD

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3001517001	1	3088 River Road, Conestoga PA	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3001517001	2	3088 River Road, Conestoga PA	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.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3001517 4TH QTR 2018-3088 RIVER RD

Lab ID	Sample ID	Analysis Method	Prep Method
3001517001	3088 River Road, Conestoga PA	D6919-09	
3001517001	3088 River Road, Conestoga PA	EPA 200.7	EPA ACID
3001517001	3088 River Road, Conestoga PA	EPA 200.7	EPA TRMD
3001517001	3088 River Road, Conestoga PA	EPA 300.0	
3001517001	3088 River Road, Conestoga PA	EPA 410.4	
3001517001	3088 River Road, Conestoga PA	EPA 420.4	420.4/9066
3001517001	3088 River Road, Conestoga PA	Field	
3001517001	3088 River Road, Conestoga PA	S2540C-11	
3001517001	3088 River Road, Conestoga PA	S4500HB-11	
3001517001	3088 River Road, Conestoga PA	SM2130B-2011	
3001517001	3088 River Road, Conestoga PA	SM2320B-2011	
3001517001	3088 River Road, Conestoga PA	SM2510B-2011	
3001517001	3088 River Road, Conestoga PA	SM5310B-2011	
3001517001	3088 River Road, Conestoga PA	SW846 8260B	
3001517001	3088 River Road, Conestoga PA	SW846 9020B	

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December 6, 2018

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

Certificate of Analysis

Project Name:	CONTIGUOUS LANDOWNER- 3100 RIVER RD	Workorder:	3001520
Purchase Order:	PO1000126	Workorder ID:	4TH QTR 2018-3100 RIVER RD

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, November 20, 2018.

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

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

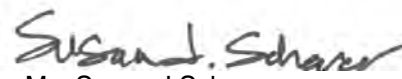
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

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

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

CC: Mr. Nicholas Rogers , Ms. Jordan Gallagher , Landowner , Mr. Jeff Musser

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


Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3001520 4TH QTR 2018-3100 RIVER RD

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3001520001	3100 River Road, Conestoga, PA	Water	11/20/2018 10:12	11/20/2018 17:44	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3001520 4TH QTR 2018-3100 RIVER RD

Notes

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

Standard Acronyms/Flags

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: 3001520 4TH QTR 2018-3100 RIVER RD

 Lab ID: **3001520001** Date Collected: 11/20/2018 10:12 Matrix: Water
 Sample ID: **3100 River Road, Conestoga, PA** Date Received: 11/20/2018 17:44

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
Toluene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
Total Xylenes	ND		ug/L	3.0	SW846 8260B			11/29/18 18:45	DD	K
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
Trichloroethene	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			11/29/18 18:45	DD	K
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	79.7		%	62 - 133	SW846 8260B			11/29/18 18:45	DD	K
4-Bromofluorobenzene (S)	110		%	79 - 114	SW846 8260B			11/29/18 18:45	DD	K
Dibromofluoromethane (S)	83.3		%	78 - 116	SW846 8260B			11/29/18 18:45	DD	K
Toluene-d8 (S)	89.5		%	76 - 127	SW846 8260B			11/29/18 18:45	DD	K
WET CHEMISTRY										
Alkalinity, Bicarbonate	28		mg/L	5	SM2320B-2011			11/22/18 07:30	MBW	C
Alkalinity, Total	28	1	mg/L	5	SM2320B-2011			11/22/18 07:30	MBW	C
Ammonia-N	ND		mg/L	0.100	D6919-09			11/29/18 02:36	CMM	B
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			12/1/18 15:31	AK	B
Chloride	49.6		mg/L	2.0	EPA 300.0			11/21/18 06:03	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			11/21/18 06:03	CHW	C
Halogen, Total Organic (TOX)	ND		ug/L	20.0	SW846 9020B			11/30/18 13:43	PAG	I
Nitrate-N	6.2		mg/L	0.20	EPA 300.0			11/21/18 06:03	CHW	C
Nitrite-N	ND		mg/L	0.20	EPA 300.0			11/21/18 06:03	CHW	C
pH	6.01	2	pH_Units		S4500HB-11			11/22/18 07:30	MBW	C
Phenolics	ND		mg/L	0.005	EPA 420.4	11/28/18 15:56	C_D	11/29/18 06:28	C_D	H
Specific Conductance	276		umhos/cm	1	SM2510B-2011			11/22/18 07:30	MBW	C

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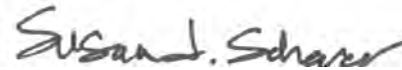
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ANALYTICAL RESULTS

Workorder: 3001520 4TH QTR 2018-3100 RIVER RD

Lab ID: **3001520001** Date Collected: 11/20/2018 10:12 Matrix: Water
Sample ID: **3100 River Road, Conestoga, PA** Date Received: 11/20/2018 17:44

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Sulfate	6.8		mg/L	2.0	EPA 300.0			11/21/18 06:03	CHW	C
Total Dissolved Solids	260		mg/L	5	S2540C-11			11/27/18 12:35	EXS	C
Total Organic Carbon (TOC)	ND		mg/L	0.50	SM5310B-2011			12/5/18 06:49	PAG	F
Turbidity	ND		NTU	0.10	SM2130B-2011			11/22/18 07:05	MBW	C
METALS										
Calcium, Total	21.2		mg/L	0.050	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:07	SRT	D1
Calcium, Dissolved	21.5		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:01	SRT	E
Iron, Total	ND		mg/L	0.030	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:07	SRT	D1
Iron, Dissolved	ND		mg/L	0.060	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:01	SRT	E
Magnesium, Total	8.4		mg/L	0.050	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:07	SRT	D1
Magnesium, Dissolved	7.9		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:01	SRT	E
Manganese, Total	0.012		mg/L	0.0025	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:07	SRT	D1
Manganese, Dissolved	0.012		mg/L	0.0050	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:01	SRT	E
Potassium, Total	1.5		mg/L	0.25	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:07	SRT	D1
Potassium, Dissolved	1.4		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:01	SRT	E
Sodium, Total	15.9		mg/L	0.25	EPA 200.7	11/27/18 09:15	BMK	11/30/18 09:07	SRT	D1
Sodium, Dissolved	15.2		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	11/29/18 17:01	SRT	E
FIELD PARAMETERS										
pH, Field (SM4500B)	6.11		pH_Units		Field			11/20/18 10:12	BGS	M
Specific Conductance, Field	238		umhos/cm	1	Field			11/20/18 10:12	BGS	M
Temperature	15.20		Deg. C		Field			11/20/18 10:12	BGS	M



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ANALYTICAL RESULTS

Workorder: 3001520 4TH QTR 2018-3100 RIVER RD

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3001520001	1	3100 River Road, Conestoga, PA	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3001520001	2	3100 River Road, Conestoga, PA	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.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3001520 4TH QTR 2018-3100 RIVER RD

Lab ID	Sample ID	Analysis Method	Prep Method
3001520001	3100 River Road, Conestoga, PA	D6919-09	
3001520001	3100 River Road, Conestoga, PA	EPA 200.7	EPA ACID
3001520001	3100 River Road, Conestoga, PA	EPA 200.7	EPA TRMD
3001520001	3100 River Road, Conestoga, PA	EPA 300.0	
3001520001	3100 River Road, Conestoga, PA	EPA 410.4	
3001520001	3100 River Road, Conestoga, PA	EPA 420.4	420.4/9066
3001520001	3100 River Road, Conestoga, PA	Field	
3001520001	3100 River Road, Conestoga, PA	S2540C-11	
3001520001	3100 River Road, Conestoga, PA	S4500HB-11	
3001520001	3100 River Road, Conestoga, PA	SM2130B-2011	
3001520001	3100 River Road, Conestoga, PA	SM2320B-2011	
3001520001	3100 River Road, Conestoga, PA	SM2510B-2011	
3001520001	3100 River Road, Conestoga, PA	SM5310B-2011	
3001520001	3100 River Road, Conestoga, PA	SW846 8260B	
3001520001	3100 River Road, Conestoga, PA	SW846 9020B	

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December 11, 2018

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

Certificate of Analysis

Project Name:	CONTIGUOUS LANDOWNER- 3106 RIVER RD	Workorder:	3002144
Purchase Order:	PO1000126	Workorder ID:	3106 RIVER ROAD

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, November 21, 2018.

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

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

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

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

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

CC: Mr. Nicholas Rogers , Ms. Jordan Gallagher , Landowner , Mr. Jeff Musser

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

Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3002144 3106 RIVER ROAD

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3002144001	3106 River Road, Conestoga, PA	Water	11/21/2018 11:25	11/21/2018 18:41	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3002144 3106 RIVER ROAD

Notes

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

Standard Acronyms/Flags

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: 3002144 3106 RIVER ROAD

Lab ID: **3002144001** Date Collected: 11/21/2018 11:25 Matrix: Water
Sample ID: **3106 River Road, Conestoga, PA** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
Toluene	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
Total Xylenes	ND		ug/L	3.0	SW846 8260B			11/30/18 07:07	PDK	K
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
Trichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			11/30/18 07:07	PDK	K
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	99		%	62 - 133	SW846 8260B			11/30/18 07:07	PDK	K
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260B			11/30/18 07:07	PDK	K
Dibromofluoromethane (S)	94.7		%	78 - 116	SW846 8260B			11/30/18 07:07	PDK	K
Toluene-d8 (S)	93.2		%	76 - 127	SW846 8260B			11/30/18 07:07	PDK	K
WET CHEMISTRY										
Alkalinity, Bicarbonate	28		mg/L	5	SM2320B-2011			11/28/18 14:10	MSA	C
Alkalinity, Total	28	1	mg/L	5	SM2320B-2011			11/28/18 14:10	MSA	C
Ammonia-N	ND		mg/L	0.100	D6919-09			12/4/18 10:59	NJA	B
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			12/6/18 18:18	AK	B
Chloride	70.3		mg/L	2.0	EPA 300.0			11/22/18 18:06	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			11/22/18 18:06	CHW	C
Halogen, Total Organic (TOX)	ND		ug/L	20.0	SW846 9020B			12/3/18 15:45	PAG	I
Nitrate-N	11.3		mg/L	0.20	EPA 300.0			11/22/18 18:06	CHW	C
Nitrite-N	ND		mg/L	0.20	EPA 300.0			11/22/18 18:06	CHW	C
pH	6.07	2	pH_Units		S4500HB-11			11/28/18 14:10	MSA	C
Phenolics	ND		mg/L	0.005	EPA 420.4	11/30/18 16:00	C_D	12/3/18 14:10	C_D	H
Specific Conductance	371		umhos/cm	1	SM2510B-2011			11/28/18 14:10	MSA	C

ALS Environmental Laboratory Locations Across North America

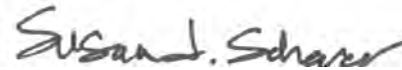
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ANALYTICAL RESULTS

Workorder: 3002144 3106 RIVER ROAD

Lab ID: **3002144001** Date Collected: 11/21/2018 11:25 Matrix: Water
Sample ID: **3106 River Road, Conestoga, PA** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Sulfate	9.2		mg/L	2.0	EPA 300.0			11/22/18 18:06	CHW	C
Total Dissolved Solids	255	4	mg/L	5	S2540C-11			12/6/18 17:35	EXS	C
Total Organic Carbon (TOC)	0.83		mg/L	0.50	SM5310B-2011			12/6/18 20:11	PAG	F
Turbidity	0.21		NTU	0.10	SM2130B-2011			11/22/18 07:50	MBW	C
METALS										
Calcium, Total	16.4		mg/L	0.050	EPA 200.7	11/29/18 08:20	BMK	12/4/18 23:28	SRT	D1
Calcium, Dissolved	ND		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 21:03	SRT	E
Iron, Total	ND		mg/L	0.030	EPA 200.7	11/29/18 08:20	BMK	12/4/18 23:28	SRT	D1
Iron, Dissolved	ND		mg/L	0.060	EPA 200.7	11/27/18 13:55	SRT	12/4/18 21:03	SRT	E
Magnesium, Total	10.4		mg/L	0.050	EPA 200.7	11/29/18 08:20	BMK	12/4/18 23:28	SRT	D1
Magnesium, Dissolved	ND		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 21:03	SRT	E
Manganese, Total	0.034		mg/L	0.0025	EPA 200.7	11/29/18 08:20	BMK	12/4/18 23:28	SRT	D1
Manganese, Dissolved	ND		mg/L	0.0050	EPA 200.7	11/27/18 13:55	SRT	12/4/18 21:03	SRT	E
Potassium, Total	1.6		mg/L	0.25	EPA 200.7	11/29/18 08:20	BMK	12/4/18 23:28	SRT	D1
Potassium, Dissolved	ND		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 21:03	SRT	E
Sodium, Total	35.4		mg/L	0.25	EPA 200.7	11/29/18 08:20	BMK	12/4/18 23:28	SRT	D1
Sodium, Dissolved	ND		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 21:03	SRT	E
FIELD PARAMETERS										
pH, Field (SM4500B)	6.14		pH_Units		Field			11/21/18 11:35	BGS	N
Specific Conductance, Field	359		umhos/cm	1	Field			11/21/18 11:35	BGS	N
Temperature	15.00		Deg. C		Field			11/21/18 11:35	BGS	N



Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3002144 3106 RIVER ROAD

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3002144001	1	3106 River Road, Conestoga, PA	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3002144001	2	3106 River Road, Conestoga, PA	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.				
3002144001	4	3106 River Road, Conestoga, PA	S2540C-11	Total Dissolved Solids
The sample was originally run within hold time, but required further analysis that exceeded hold time.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3002144 3106 RIVER ROAD

Lab ID	Sample ID	Analysis Method	Prep Method
3002144001	3106 River Road, Conestoga, PA	D6919-09	
3002144001	3106 River Road, Conestoga, PA	EPA 200.7	EPA ACID
3002144001	3106 River Road, Conestoga, PA	EPA 200.7	EPA TRMD
3002144001	3106 River Road, Conestoga, PA	EPA 300.0	
3002144001	3106 River Road, Conestoga, PA	EPA 410.4	
3002144001	3106 River Road, Conestoga, PA	EPA 420.4	420.4/9066
3002144001	3106 River Road, Conestoga, PA	Field	
3002144001	3106 River Road, Conestoga, PA	S2540C-11	
3002144001	3106 River Road, Conestoga, PA	S4500HB-11	
3002144001	3106 River Road, Conestoga, PA	SM2130B-2011	
3002144001	3106 River Road, Conestoga, PA	SM2320B-2011	
3002144001	3106 River Road, Conestoga, PA	SM2510B-2011	
3002144001	3106 River Road, Conestoga, PA	SM5310B-2011	
3002144001	3106 River Road, Conestoga, PA	SW846 8260B	
3002144001	3106 River Road, Conestoga, PA	SW846 9020B	

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

Generated by ALS
 C A
 1 of 1
 3 0 0 2 1 4 4 *

Container Type: 40 ml
 Container Size: 40 ml
 Preservative: HCl
 Cooler Temp: 6.0°C
 No. of Coolers: 1
 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 #: 103
 Initial: AFS

ANALYSES/METHOD REQUESTED

Container Type	AG	AN	AN	CG	PL	PL	PL	PL	PL
40 ml	40 ml	250 ml	250 ml	40 ml	500 ml	250 ml	250 ml	2 L	500 ml
HCl	H2SO4	H2SO4	HCl	H2SO4	HNO3	HNO3	HNO3	None	None
TOC	Q-OH	TOX	SW846-8260 VOCs	FM	NH3-N, COD	Dissolved Metals: Ca, Fe, Mg, Mn, K, Na	K, Na	Metals: Ca, Fe, Mg, Mn, K, Na	pH, TDS, NO2, NO3, Cl, SO4, F, Tb, Spc
									Alkalinity, HCO3

Enter Number of Containers Per Sample or Field Results Below.

Sample Date	Time	G or C	Matrix	TOC	Q-OH	TOX	SW846-8260 VOCs	FM	NH3-N, COD	Dissolved Metals: Ca, Fe, Mg, Mn, K, Na	K, Na	Metals: Ca, Fe, Mg, Mn, K, Na	pH, TDS, NO2, NO3, Cl, SO4, F, Tb, Spc	Alkalinity, HCO3
11-21-18	11:05	G	DW	2	1	2	3	x	1	1	1	1	1	1
2														
3														
4														
5														
6														
7														
8														
9														
10														

Project Comments:

Requisitioned By: Aaron Fry
 Date: 11-21-18
 Time: 11:05
 Received By / Company Name: [Signature]
 Date: 11-21-18
 Time: 11:05

LOGGED BY (signature): [Signature]
 REVIEWED BY (signature): [Signature]

ALS Field Services: Pickup Labor
 Composite_Sampling Rental_Equipment
 Other:

Special Processing: USACE Navy
 State Samples Collected In: NY NJ PA NC

Reportable to PADEP? Yes No
 Sample Disposal: Lab Special
 PWSID #:
 EDDS: Format Type:



December 11, 2018

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

Certificate of Analysis

Project Name:	CONTIGUOUS LANDOWNER- 3125 RIVER RD	Workorder:	3002134
Purchase Order:	PO1000126	Workorder ID:	LCSWMA-Qaurterly

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, November 21, 2018.

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.

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

CC: Mr. Nicholas Rogers , Ms. Jordan Gallagher , Landowner , Mr. Jeff Musser

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

Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3002134 LCSWMA-Quarterly

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3002134001	3125 River Road, Conestoga, PA	Water	11/21/2018 11:28	11/21/2018 18:41	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3002134 LCSWMA-Quarterly

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
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Standard Acronyms/Flags

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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: 3002134 LCSWMA-Quarterly

Lab ID: **3002134001** Date Collected: 11/21/2018 11:28 Matrix: Water
Sample ID: **3125 River Road, Conestoga, PA** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
Toluene	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
Total Xylenes	ND		ug/L	3.0	SW846 8260B			11/30/18 05:35	PDK	K
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
Trichloroethene	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			11/30/18 05:35	PDK	K
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	99.1		%	62 - 133	SW846 8260B			11/30/18 05:35	PDK	K
4-Bromofluorobenzene (S)	104		%	79 - 114	SW846 8260B			11/30/18 05:35	PDK	K
Dibromofluoromethane (S)	94.5		%	78 - 116	SW846 8260B			11/30/18 05:35	PDK	K
Toluene-d8 (S)	92.8		%	76 - 127	SW846 8260B			11/30/18 05:35	PDK	K
WET CHEMISTRY										
Alkalinity, Bicarbonate	155		mg/L	5	SM2320B-2011			11/28/18 11:33	MSA	A
Alkalinity, Total	155	1	mg/L	5	SM2320B-2011			11/28/18 11:33	MSA	A
Ammonia-N	ND		mg/L	0.100	D6919-09			12/4/18 07:16	NJA	B
Chemical Oxygen Demand (COD)	ND		mg/L	15	EPA 410.4			12/4/18 17:40	AK	B
Chloride	108		mg/L	2.0	EPA 300.0			11/22/18 13:26	CHW	C
Fluoride	ND		mg/L	0.20	EPA 300.0			11/22/18 13:26	CHW	C
Halogen, Total Organic (TOX)	ND		ug/L	20.0	SW846 9020B			12/3/18 14:53	PAG	I
Nitrate-N	7.7		mg/L	0.20	EPA 300.0			11/22/18 13:26	CHW	C
Nitrite-N	ND		mg/L	0.20	EPA 300.0			11/22/18 13:26	CHW	C
pH	7.41	2	pH_Units		S4500HB-11			11/28/18 11:33	MSA	C
Phenolics	ND		mg/L	0.005	EPA 420.4	11/30/18 15:59	C_D	12/3/18 14:10	C_D	H
Specific Conductance	819		umhos/cm	1	SM2510B-2011			11/28/18 11:33	MSA	A

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ANALYTICAL RESULTS

Workorder: 3002134 LCSWMA-Quarterly

Lab ID: **3002134001** Date Collected: 11/21/2018 11:28 Matrix: Water
Sample ID: **3125 River Road, Conestoga, PA** Date Received: 11/21/2018 18:41

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Sulfate	28.2		mg/L	2.0	EPA 300.0			11/22/18 13:26	CHW	C
Total Dissolved Solids	538	3	mg/L	5	S2540C-11			12/3/18 16:45	EXS	C
Total Organic Carbon (TOC)	2.2		mg/L	0.50	SM5310B-2011			12/6/18 15:02	PAG	F
Turbidity	ND		NTU	0.10	SM2130B-2011			11/22/18 07:25	MBW	C
METALS										
Calcium, Total	1.8		mg/L	0.050	EPA 200.7	12/7/18 09:40	BMK	12/10/18 21:57	SRT	D3
Calcium, Dissolved	6.2		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:59	SRT	E
Iron, Total	ND		mg/L	0.030	EPA 200.7	12/7/18 09:40	BMK	12/10/18 21:57	SRT	D3
Iron, Dissolved	ND		mg/L	0.060	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:59	SRT	E
Magnesium, Total	0.42		mg/L	0.050	EPA 200.7	12/7/18 09:40	BMK	12/10/18 21:57	SRT	D3
Magnesium, Dissolved	7.1		mg/L	0.10	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:59	SRT	E
Manganese, Total	ND		mg/L	0.0025	EPA 200.7	12/7/18 09:40	BMK	12/10/18 21:57	SRT	D3
Manganese, Dissolved	0.056		mg/L	0.0050	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:59	SRT	E
Potassium, Total	10.4		mg/L	0.25	EPA 200.7	12/7/18 09:40	BMK	12/10/18 21:57	SRT	D3
Potassium, Dissolved	5.7		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:59	SRT	E
Sodium, Total	149		mg/L	0.25	EPA 200.7	12/7/18 09:40	BMK	12/10/18 21:57	SRT	D3
Sodium, Dissolved	76.3		mg/L	0.50	EPA 200.7	11/27/18 13:55	SRT	12/4/18 20:59	SRT	E
FIELD PARAMETERS										
pH, Field (SM4500B)	7.34		pH_Units		Field			11/21/18 11:28	BGS	N
Specific Conductance, Field	789		umhos/cm	1	Field			11/21/18 11:28	BGS	N
Temperature	15.10		Deg. C		Field			11/21/18 11:28	BGS	N



Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3002134 LCSWMA-Quarterly

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3002134001	1	3125 River Road, Conestoga, PA	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3002134001	2	3125 River Road, Conestoga, PA	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.				
3002134001	3	3125 River Road, Conestoga, PA	S2540C-11	Total Dissolved Solids
The sample was originally run within hold time, but required further analysis that exceeded hold time.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3002134 LCSWMA-Quarterly

Lab ID	Sample ID	Analysis Method	Prep Method
3002134001	3125 River Road, Conestoga, PA	D6919-09	
3002134001	3125 River Road, Conestoga, PA	EPA 200.7	EPA ACID
3002134001	3125 River Road, Conestoga, PA	EPA 200.7	EPA TRMD
3002134001	3125 River Road, Conestoga, PA	EPA 300.0	
3002134001	3125 River Road, Conestoga, PA	EPA 410.4	
3002134001	3125 River Road, Conestoga, PA	EPA 420.4	420.4/9066
3002134001	3125 River Road, Conestoga, PA	Field	
3002134001	3125 River Road, Conestoga, PA	S2540C-11	
3002134001	3125 River Road, Conestoga, PA	S4500HB-11	
3002134001	3125 River Road, Conestoga, PA	SM2130B-2011	
3002134001	3125 River Road, Conestoga, PA	SM2320B-2011	
3002134001	3125 River Road, Conestoga, PA	SM2510B-2011	
3002134001	3125 River Road, Conestoga, PA	SM5310B-2011	
3002134001	3125 River Road, Conestoga, PA	SW846 8260B	
3002134001	3125 River Road, Conestoga, PA	SW846 9020B	

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

34 Dogwood Lane • Middletown, PA 17057 • 717.944.5541 • FAX: 717.944.1430
ALS Environmental
14700 State Road • Middletown, PA 17057 • Phone: 717.944.5541 • Fax: 717.944.1430

Client Name: LCSWMA - Christian C. Beck
Address: 3125 River Road
Conestoga, PA 17516
Contact: Christian C. Beck
Phone#: (717) 871-0448
Project Name#: LCSWMA - Quarterly
Bill To: Lancaster County Solid Waste MA

TAT Normal-Standard TAT is 10-12 business days.
 Rush-Subject to ALS approval and surcharges.
Date Required: _____ Approved By: _____
Email? -Y -N
Fax? -Y -N

Container Type	AG	AN	AN	CG	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL
Container Size	40 ml	125 ml	250 ml	40 ml	500 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml	250 ml
Preservative	HCl	H2SO4	H2SO4	HCl	H2SO4	HNO3	HNO3	HNO3	HNO3	HNO3	HNO3	HNO3	HNO3	HNO3	HNO3	HNO3	HNO3	HNO3	HNO3
Matrix	TOC	OH	TOX	SW46-8260 VOCs	FM	NH3-N, COD	Dissolved Metals: Ca, Fe, Mg, Mn, K, Na	K, Na	Metals: Ca, Fe, Mg, Mn, K, Na	PH, TDS, NO2, NO3, Cl, SO4, F, Pb, Spc	Alkalinity, HCO3								

Enter Number of Containers Per Sample or Field Results Below.

Sample Date	Time	Matrix	TOC	OH	TOX	SW46-8260 VOCs	FM	NH3-N, COD	Dissolved Metals: Ca, Fe, Mg, Mn, K, Na	K, Na	Metals: Ca, Fe, Mg, Mn, K, Na	PH, TDS, NO2, NO3, Cl, SO4, F, Pb, Spc	Alkalinity, HCO3
11-21-18	11:00	G DW	2	1	2	3	x	1	1	1	1	1	1
2													
3													
4													
5													
6													
7													
8													
9													
10													

Project Comments: _____

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

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
<i>[Signature]</i>	11-21-18	11:00	<i>[Signature]</i>		

ALS Field Services: Pickup Labor
 Composite_Sampling Rental_Equipment
 Other:

Special Processing: USACE Navy
State Samples Collected In: NY NJ PA NC

Reportable to PADEP? Yes No
PWSID # _____
EDDS: Format Type: _____



Lancaster County Solid Waste Management Authority

Frey Farm Landfill

Exceedence Report

<i>Parameter Name</i>	<i>Units</i>	<i>Concentration</i>	<i>Criteria Conc</i>	<i>Qualifiers</i>	<i>Criteria</i>
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3044RIVERR	3002096001	11/21/2018	WATER		
NITRATE-NITROGEN	mg/l	18.30	10.00		EPA-MCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3052RIVERR	3002097001	11/21/2018	WATER		
NITRATE-NITROGEN	mg/l	17.30	10.00		EPA-MCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3056RIVERR	3002099001	11/21/2018	WATER		
NITRATE-NITROGEN	mg/l	18.30	10.00		EPA-MCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3060RIVERR	3001522001	11/20/2018	WATER		
NITRATE-NITROGEN	mg/l	19.10	10.00		EPA-MCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3076RIVERR	3002133001	11/21/2018	WATER		
NITRATE-NITROGEN	mg/l	10.90	10.00		EPA-MCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3088RIVERR	3001517001	11/20/2018	WATER		
NITRATE-NITROGEN	mg/l	12.00	10.00		EPA-MCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3106RIVERR	3002144001	11/21/2018	WATER		
NITRATE-NITROGEN	mg/l	11.30	10.00		EPA-MCL

Lancaster County Solid Waste Management Authority

Frey Farm Landfill

Exceedence Report

<i>Parameter Name</i>	<i>Units</i>	<i>Concentration</i>	<i>Criteria Conc</i>	<i>Qualifiers</i>	<i>Criteria</i>
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3044RIVERR	3002096001	11/21/2018	WATER		
MANGANESE, DISSOLVED	mg/l	0.07	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.07	0.05		EPA-SMCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3056RIVERR	3002099001	11/21/2018	WATER		
MANGANESE, DISSOLVED	mg/l	0.10	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.10	0.05		EPA-SMCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3060RIVERR	3001522001	11/20/2018	WATER		
MANGANESE, DISSOLVED	mg/l	0.13	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.14	0.05		EPA-SMCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3076RIVERR	3002133001	11/21/2018	WATER		
MANGANESE, DISSOLVED	mg/l	0.19	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.18	0.05		EPA-SMCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3079RIVERR	3001521001	11/20/2018	WATER		
MANGANESE, DISSOLVED	mg/l	0.20	0.05		EPA-SMCL
MANGANESE, TOTAL	mg/l	0.21	0.05		EPA-SMCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3088RIVERR	3001517001	11/20/2018	WATER		
TDS (TOT. DISSOLVED SOLIDS)	mg/l	1,250.00	500.00		EPA-SMCL
<i>Location ID</i>	<i>Sample Number</i>	<i>Sample Date</i>	<i>Sample Type</i>	<i>Sample Depth</i>	
3125RIVERR	3002134001	11/21/2018	WATER		
MANGANESE, DISSOLVED	mg/l	0.06	0.05		EPA-SMCL
TDS (TOT. DISSOLVED SOLIDS)	mg/l	538.00	500.00		EPA-SMCL