



November 29, 2012

Ms. Charlene Sauls; Regional Hydrogeologist  
Pennsylvania Department of Environmental Protection  
Bureau of Land Recycling and Waste Management  
909 Elmerton Avenue  
Harrisburg, PA 17110-8200

REF: Creswell Landfill (BWM Permit #100008)  
Groundwater Monitoring; 4<sup>th</sup> Quarter 2012

Dear Ms. Sauls:

Enclosed, as a PDF file, are the Form 19 reports for the 4<sup>th</sup> Quarter 2012 sampling period completed at the above referenced facility. The laboratory results were reviewed to evaluate changes or trends and as a quality assurance check of the data. In summary:

#### **GENERAL**

- This sampling event was for the "Quarterly" Form 19 parameters, with all thirteen (13) GWMP locations being sampled
- Enclosed, on CD, is file CWMP1012.csv that should be in the format compatible with your LandLinks software. Additionally, the CD includes a PDF file of all the Forms 19 and PDF files of the laboratory reports
- Where applicable, the Forms 19 indicate the samples were not filtered; this is inaccurate

#### **UPGRADIENT WATER QUALITY**

- Upgradient locations CWMP001W and 5W had results that generally parallel historic or seasonal values.

#### **DOWNGRADIENT WATER QUALITY**

- Location CWMP002W had values results that generally parallel historic or seasonal values excepting VOC's which were slightly lower than 3<sup>rd</sup> Quarter sampling. We will continue to monitor this closely during future events and anticipate levels will continue to decline.
- Location CWMP003W continues to indicate declining levels of 1,1-dichloroethane and 1,1,1-trichloroethane as we continue to observe concentrations declining over time with the 2012 VOC's the lowest annual average since 2003. We will continue to monitor this pumping well location and report on its performance following future sampling events.



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Creswell Landfill (BWM Permit #100008)  
Groundwater Monitoring; 3<sup>rd</sup> Quarter 2012  
November 29, 2012

- Location CWMP004W also has a recent history of low level detects of 1,1-dichloroethane and 1,1,1-trichloroethane. As with MP-3, we continue to document concentrations declining over time with the 2012 VOC's the lowest annual average since 2002. There were two (2) parameters noted during 2<sup>nd</sup> Quarter sampling which appeared anomalous: fluoride (reported at 0.26 mg/l where "not detected" values were noted during all previous sampling events) and sulfate (reported at 29.6 mg/l with a historic value of 5.1 mg/l). As with 3<sup>rd</sup> Quarter sampling, fluoride was not at "not detected" and sulfate was reported at 4.6 mg/l (3<sup>rd</sup> Quarter) and 5.0 mg/l (4<sup>th</sup> Quarter); both values approximating historical data. We will continue to monitor and report on this pumping well location during future sampling events.
- Location CWMP007W had a reported value for ammonia-nitrogen of 0.55 mg/l last quarter, which would have been the first detect in 91 sampling events. This quarter, the result was "not detected". Sulfate had a reported value of 21 mg/l last quarter but dropped significantly to 14.3 mg/l. Accordingly, both 3<sup>rd</sup> Quarter results appear atypical and we will monitor them closely during future sampling events.
- All other locations had results which generally parallel seasonal or historic data.

### SUMMARY

Other than indicated above, we observed no unusual trends and the values reported are generally consistent with historic or seasonal results. We are currently scheduled to complete our next sampling (for the "quarterly" Form 19 parameters) in January 2013.

Feel free to call if you have any questions or comments.

Sincerely,

Brooks K. Norris  
Senior Manager, Technical Services

Enclosures

cc: Bob Zorbaugh; Bob Eshbach; Emily Kauffman  
Randy Weiss (PaDEP)



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised  
11/29/2012

DEP USE ONLY

Date Received

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

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

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

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County Municipality: Manor Township

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

Depth to Water Level: 43.31 ft Measured from:  Land Surface  TOC

Casing Stickup: -0.37 ft Elevation of Water Level: 470.12 ft./MSL

Sampling Depth: 130 ft Volume of Water Column: 142.00 gal

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

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

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

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 10/15/2012 Sample Collection Time: 10:34

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9993527001 Final Lab Analysis CompletionDate: 10/19/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP005W

Sample Date 10/15/2012

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

**ANALYTES**

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	12	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	17	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	63.4	EPA 300.0
FLUORIDE	0.1 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	9.9	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	65	SW846 6010B
NITRATE-NITROGEN	11.3	EPA 300.0
pH-FIELD (SU)	4.89	FIELD
pH-LAB (SU)	6.02	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	2.3	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	25.7	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	336	FIELD
SPEC. COND., LAB (umhos/cm)	321	EPA 120.1
SULFATE	1.9	EPA 300.0
ALKALINITY	12	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	205	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.75	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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

Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP005W

Sample Date 10/15/2012

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

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

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
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BUREAU OF LAND RECYCLING AND WASTE

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Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor Township

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

Depth to Water Level: 8.1 ft Measured from:  Land Surface  TOC

Casing Stickup: 1.50 ft Elevation of Water Level: 445.3 ft./MSL

Sampling Depth: 33 ft Volume of Water Column: 41.71 gal

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

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

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

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 10/15/2012 Sample Collection Time: 12:16

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9993527002 Final Lab Analysis CompletionDate: 10/17/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP007W

Sample Date 10/15/2012

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

**ANALYTES**

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	10	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	17.5	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	69.1	EPA 300.0
FLUORIDE	0.1 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	9	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	5.5	SW846 6010B
NITRATE-NITROGEN	10.6	EPA 300.0
pH-FIELD (SU)	5.1	FIELD
pH-LAB (SU)	6.02	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	2.2	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	30.3	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	361	FIELD
SPEC. COND., LAB (umhos/cm)	342	EPA 120.1
SULFATE	14.3	EPA 300.0
ALKALINITY	10	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	198	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.15	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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

I.D. No 100008

Monitoring Point No. CWMP007W

Sample Date 10/15/2012

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

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

T Please indicate detection limit if analyte is not detected.





COMMONWEALTH OF PENNSYLVANIA  
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Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County Municipality: Manor Township

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

Depth to Water Level: 29.68 ft Measured from:  Land Surface  TOC

Casing Stickup: 1.23 ft Elevation of Water Level: 485.45 ft./MSL

Sampling Depth: 57 ft Volume of Water Column: 53.78 gal

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

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

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

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 10/15/2012 Sample Collection Time: 13:32

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9993527003 Final Lab Analysis CompletionDate: 10/17/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP001W

Sample Date 10/15/2012

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

**ANALYTES**

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	5	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	17	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	28.3	EPA 300.0
FLUORIDE	0.1 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	11.5	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	58	SW846 6010B
NITRATE-NITROGEN	22.3	EPA 300.0
pH-FIELD (SU)	4.94	FIELD
pH-LAB (SU)	5.91	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	2.4	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	13.1	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	289	FIELD
SPEC. COND., LAB (umhos/cm)	276	EPA 120.1
SULFATE	1.3	EPA 300.0
ALKALINITY	5	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	198	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	63.7	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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

Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP001W

Sample Date 10/15/2012

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

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

T Please indicate detection limit if analyte is not detected.



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DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

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Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor Township

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

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

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

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

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

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

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

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

Sample Date (mm/dd/yy): 10/18/2012 Sample Collection Time: 10:24

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9994172001 Final Lab Analysis CompletionDate: 10/23/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP017S

Sample Date 10/18/2012

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

**ANALYTES**

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.12	EPA 350.3
BICARBONATE	163	SM18-2321
CALCIUM, TOTAL	85.4	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	748	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	270	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	62.8	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	120	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	37	EPA 300.0
pH-FIELD (SU)	7.32	FIELD
pH-LAB (SU)	7.95	EPA 150.1
POTASSIUM, TOTAL	20.4	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	380	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	3139	FIELD
SPEC. COND., LAB (umhos/cm)	3100	EPA 120.1
SULFATE	86.6	EPA 300.0
ALKALINITY	163	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1590	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	4.9	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.76	SM 2130B

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

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised  
11/29/2012

DEP USE ONLY

Date Received

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

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

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

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor

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

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

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

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

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

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

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

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

Sample Date (mm/dd/yy): 10/18/2012 Sample Collection Time: 11:32

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9994172002 Final Lab Analysis CompletionDate: 10/23/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP018S

Sample Date 10/18/2012

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

**ANALYTES**

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	178	SM18-2321
CALCIUM, TOTAL	78.4	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	580	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	96	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	50.7	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	9.6	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	24.8	EPA 300.0
pH-FIELD (SU)	8.01	FIELD
pH-LAB (SU)	8.3	EPA 150.1
POTASSIUM, TOTAL	18.8	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	264	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	2370	FIELD
SPEC. COND., LAB (umhos/cm)	2360	EPA 120.1
SULFATE	31.4	EPA 300.0
ALKALINITY	178	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1220	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	6.5	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.85	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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



I.D. No 100008

Monitoring Point No. CWMP018S

Sample Date 10/18/2012

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

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

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

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

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

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor Township

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

Depth to Water Level: 64.83 ft Measured from:  Land Surface  TOC

Casing Stickup: 1.90 ft Elevation of Water Level: 317.87 ft./MSL

Sampling Depth: 60 ft Volume of Water Column: 54.44 gal

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

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

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

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 10/19/2012 Sample Collection Time: 12:43

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9994459001 Final Lab Analysis CompletionDate: 10/23/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP012W

Sample Date 10/19/2012

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

**ANALYTES**

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	73	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	35.6	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	31.5	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	110	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	9.6	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	760	SW846 6010B
NITRATE-NITROGEN	11.8	EPA 300.0
pH-FIELD (SU)	6.74	FIELD
pH-LAB (SU)	6.6	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	1.5	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	12.5	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	245	FIELD
SPEC. COND., LAB (umhos/cm)	316	EPA 120.1
SULFATE	3.9	EPA 300.0
ALKALINITY	73	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	203	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1.4	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	9.58	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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

Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP012W

Sample Date 10/19/2012

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

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	3.4	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

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

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

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor Township

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

Depth to Water Level: 10.38 ft Measured from:  Land Surface  TOC

Casing Stickup: 2.53 ft Elevation of Water Level: 301.59 ft./MSL

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

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

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

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

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 10/19/2012 Sample Collection Time: 14:40

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9994459002 Final Lab Analysis CompletionDate: 10/23/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 10/19/2012

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

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	7	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	4.7	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	2.7	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	1.1	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	17	SW846 6010B
NITRATE-NITROGEN	0.24	EPA 300.0
pH-FIELD (SU)	4.66	FIELD
pH-LAB (SU)	6.55	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	0.5 ND	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	3.3	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	56	FIELD
SPEC. COND., LAB (umhos/cm)	54	EPA 120.1
SULFATE	12.1	EPA 300.0
ALKALINITY	7	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	34	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	8.84	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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

Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 10/19/2012

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

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

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised  
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**FORM 19**  
**MUNICIPAL WASTE LANDFILL**  
**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor Township

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

Depth to Water Level: 73.29 ft Measured from:  Land Surface  TOC

Casing Stickup: -1.19 ft Elevation of Water Level: 452.52 ft./MSL

Sampling Depth: 85 ft Volume of Water Column: 39.23 gal

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

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

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

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 10/22/2012 Sample Collection Time: 11:27

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9994639001 Final Lab Analysis CompletionDate: 10/24/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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



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

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	82	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	56.9	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	46	EPA 410.4
CHLORIDE	116	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	17.3	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	800	SW846 6010B
NITRATE-NITROGEN	3.4	EPA 300.0
pH-FIELD (SU)	4.56	FIELD
pH-LAB (SU)	6.04	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	3	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	24.1	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	621	FIELD
SPEC. COND., LAB (umhos/cm)	623	EPA 120.1
SULFATE	24.2	EPA 300.0
ALKALINITY	82	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	327	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	12.9	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	3.44	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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

Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP002W

Sample Date 10/22/2012

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

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	53	SW846 8260B
1,1-DICHLOROETHENE	1.9	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	5.5	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

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

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**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor Township

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

Depth to Water Level: 70.03 ft Measured from:  Land Surface  TOC

Casing Stickup: -1.37 ft Elevation of Water Level: 459.50 ft./MSL

Sampling Depth: 80 ft Volume of Water Column: 102.76 gal

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

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

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

Spring Flow Rate:    gpm

Sample Date (mm/dd/yy): 10/22/2012 Sample Collection Time: 11:43

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9994639002 Final Lab Analysis CompletionDate: 10/24/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP004W

Sample Date 10/22/2012

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

**ANALYTES**

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	EPA 350.3
BICARBONATE	22	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	20.7	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	35.1	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	6.3	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	6.2	SW846 6010B
NITRATE-NITROGEN	8.7	EPA 300.0
pH-FIELD (SU)	4.96	FIELD
pH-LAB (SU)	6.28	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	1.4	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	13.4	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	260	FIELD
SPEC. COND., LAB (umhos/cm)	233	EPA 120.1
SULFATE	5	EPA 300.0
ALKALINITY	22	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	176	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.18	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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

I.D. No 100008

Monitoring Point No. CWMP004W

Sample Date 10/22/2012

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

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1.8	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised  
11/29/2012

DEP USE ONLY

Date Received

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

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

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

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor Township

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

Depth to Water Level: 3.2 ft Measured from:  Land Surface  TOC

Casing Stickup: 2.80 ft Elevation of Water Level: 419.1 ft./MSL

Sampling Depth: 19 ft Volume of Water Column: 3.20 gal

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

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

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

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 10/22/2012 Sample Collection Time: 13:08

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9994639003 Final Lab Analysis CompletionDate: 10/24/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP008W

Sample Date 10/22/2012

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

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	6.13	EPA 350.3
BICARBONATE	433	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	68.7	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	34	EPA 410.4
CHLORIDE	54.8	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	25000	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	31.1	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	14000	SW846 6010B
NITRATE-NITROGEN	0.2 ND	EPA 300.0
pH-FIELD (SU)	5.93	FIELD
pH-LAB (SU)	6.5	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	9.5	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	47.9	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	960	FIELD
SPEC. COND., LAB (umhos/cm)	948	EPA 120.1
SULFATE	7.3	EPA 300.0
ALKALINITY	433	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	478	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	8.7	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	28.2	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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

I.D. No 100008

Monitoring Point No. CWMP008W

Sample Date 10/22/2012

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

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1.7	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	8.1	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.





COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised  
11/29/2012

DEP USE ONLY

Date Received

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

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

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor Township

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

Depth to Water Level: 9.33 ft Measured from:  Land Surface  TOC

Casing Stickup: 2.70 ft Elevation of Water Level: 394.87 ft./MSL

Sampling Depth: 16 ft Volume of Water Column: 6.77 gal

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

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

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

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 10/22/2012 Sample Collection Time: 13:35

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9994639004 Final Lab Analysis CompletionDate: 10/24/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP009W

Sample Date 10/22/2012

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

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	27.3	EPA 350.3
BICARBONATE	593	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	130	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	90	EPA 410.4
CHLORIDE	387	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	32600	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	64.2	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	11100	SW846 6010B
NITRATE-NITROGEN	0.2 ND	EPA 300.0
pH-FIELD (SU)	6.05	FIELD
pH-LAB (SU)	6.61	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	33.1	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	137	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	2257	FIELD
SPEC. COND., LAB (umhos/cm)	2190	EPA 120.1
SULFATE	2.7	EPA 300.0
ALKALINITY	593	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1060	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	30.5	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	90.1	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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

I.D. No 100008

Monitoring Point No. CWMP009W

Sample Date 10/22/2012

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

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1.9	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	5.1	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised  
11/29/2012

DEP USE ONLY

Date Received

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

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

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor Township

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

Depth to Water Level: 8.78 ft Measured from:  Land Surface  TOC

Casing Stickup: 2.10 ft Elevation of Water Level: 352.12 ft./MSL

Sampling Depth: 17 ft Volume of Water Column: 7.06 gal

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

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

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

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 10/22/2012 Sample Collection Time: 13:58

Sample Collector's Name: BGS

Sample Collector's Affiliation: ALS ENVIRONMENTAL

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9994639005 Final Lab Analysis CompletionDate: 10/24/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP010W

Sample Date 10/22/2012

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

**ANALYTES**

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.47	EPA 350.3
BICARBONATE	100	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	72.5	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	605	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	120	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	43	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	180	SW846 6010B
NITRATE-NITROGEN	10.4	EPA 300.0
pH-FIELD (SU)	6.32	FIELD
pH-LAB (SU)	7.05	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	15.8	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	255	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	2193	FIELD
SPEC. COND., LAB (umhos/cm)	2180	EPA 120.1
SULFATE	38.6	EPA 300.0
ALKALINITY	100	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1090	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	3.8	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	5.05	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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

Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP010W

Sample Date 10/22/2012

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

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

T Please indicate detection limit if analyte is not detected.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised  
11/29/2012

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Date Received

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

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

**SECTION A. APPLICANT IDENTIFIER**

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility ID (as issued by DEP): 100008

**SECTION B. FACILITY INFORMATION**

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

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

Location (County): Lancaster County

Municipality: Manor Township

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

Depth to Water Level: 98.9 ft Measured from:  Land Surface  TOC

Casing Stickup: -1.29 ft Elevation of Water Level: 425.31 ft./MSL

Sampling Depth: 100 ft Volume of Water Column: -35.10 gal

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

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

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

Spring Flow Rate:      gpm

Sample Date (mm/dd/yy): 10/26/2012 Sample Collection Time: 8:05

Sample Collector's Name: JM

Sample Collector's Affiliation: LCSWMA

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 9995774001 Final Lab Analysis CompletionDate: 11/5/2012

Name/Affiliation of Person who Filled Out Form: Brooks K. Norris

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

I.D. No 100008

Monitoring Point No. CWMP003W

Sample Date 10/26/2012

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

**ANALYTES**

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

ANALYTE	VALUE <sup>T</sup>	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.13	EPA 350.3
BICARBONATE	15	SM18-2321
CALCIUM, TOTAL		SW846 6010B
CALCIUM, DISSOLVED	27.7	SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	58.8	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)		SW846 6010B
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010B
MAGNESIUM, TOTAL		SW846 6010B
MAGNESIUM, DISSOLVED	9.4	SW846 6010B
MANGANESE, TOTAL (ug/l)		SW846 6010B
MANGANESE, DISSOLVED (ug/l)	8.6	SW846 6010B
NITRATE-NITROGEN	10.6	EPA 300.0
pH-FIELD (SU)	4.56	FIELD
pH-LAB (SU)	6.19	EPA 150.1
POTASSIUM, TOTAL		SW846 6010B
POTASSIUM, DISSOLVED	1.6	SW846 6010B
SODIUM, TOTAL		SW846 6010B
SODIUM, DISSOLVED	16.7	SW846 6010B
SPEC. COND., FIELD (umhos/cm)	339	FIELD
SPEC. COND., LAB (umhos/cm)	313	EPA 120.1
SULFATE	4.6	EPA 300.0
ALKALINITY	15	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	230	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	8.59	SM 2130B

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

T Please indicate detection limit if analyte is not detected.

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



I.D. No 100008

Monitoring Point No. CWMP003W

Sample Date 10/26/2012

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

<b>ANALYTE</b>	<b>VALUE<sup>T</sup></b>	<b>ANALYSIS METHOD NUMBER</b>
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	5.8	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1.6	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.