



Unlocking the Energy of Innovation

May 16, 2013

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; 2nd Quarter 2013

Dear Ms. Sauls:

Enclosed, as a PDF file, are the Form 19 reports for the 2nd Quarter 2013 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 "Annual" Form 19 parameters, all of the thirteen (13) GWMP locations were sampled
- Enclosed, on CD, is file CWMP0413.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

UPGRADIENT WATER QUALITY

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

DOWNGRADIENT WATER QUALITY

- Location CWMP002W had results that generally parallel historic or seasonal values excepting VOC's which are continuing a downward trend from levels noted during 3rd Quarter 2012 sampling (quarterly VOC's were 34.4% lower this quarter than 3rd Quarter 2012). We will continue to monitor this closely during future events and anticipate levels will continue to decline.

Page 2 of 2

Creswell Landfill (BWM Permit #100008)
Groundwater Monitoring; 2nd Quarter 2013
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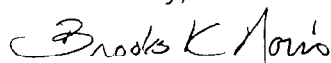
- Location CWMP003W continues to indicate declining levels of 1,1-dichloroethane and 1,1,1-trichloroethane with average annual results for these two (2) parameters now having declined 80.2% since 2006. We will continue to monitor this pumping well location and report on its performance following future sampling events.
- 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 (average annual results for these two (2) parameters have declined 80.4% since 2006). 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 during 3rd Quarter 2012 sampling, which would have been the first detect in 91 sampling events. This quarter, as with 1st Quarter 2013 and 4th Quarter 2012 sampling, the result was "not detected". Sulfate had a reported value of 21 mg/l during 3rd Quarter 2012 sampling but dropped significantly to 14.3 mg/l during the 4th Quarter, 13.0 mg/l in the 1st Quarter and 13.4 mg/l this quarter. Accordingly, 3rd Quarter 2012 results for both ammonia-nitrogen and sulfate 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 July.

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 West
Randy Weiss (PaDEP)



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

Date Prepared/Revised
05/15/2013

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^o 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: 40.6 ft Measured from: Land Surface TOC

Casing Stickup: -0.37 ft Elevation of Water Level: 472.83 ft./MSL

Sampling Depth: 130 ft Volume of Water Column: 145.98 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): 4/15/2013 Sample Collection Time: 9:38

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): 1021826001 Final Lab Analysis Completion Date: 4/26/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP005W

Sample Date 4/15/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	SM4500D
BICARBONATE	11	SM20 2321
CALCIUM, TOTAL	21.8	SW846 6010C
CALCIUM, DISSOLVED	19.7	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	78.7	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	11.7	SW846 6010C
MAGNESIUM, DISSOLVED	11.5	SW846 6010C
MANGANESE, TOTAL (ug/l)	81	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	73	SW846 6010C
NITRATE-NITROGEN	14.5	EPA 300
pH-FIELD (SU)	4.65	FIELD
pH-LAB (SU)	5.92	SM4500B
POTASSIUM, TOTAL	2.7	SW846 6010C
POTASSIUM, DISSOLVED	2.6	6SW846 010C
SODIUM, TOTAL	33.6	SW846 6010C
SODIUM, DISSOLVED	30.9	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	419	FIELD
SPEC. COND., LAB (umhos/cm)	416	EPA 120.1
SULFATE	5 ND	EPA 300
ALKALINITY	11	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	246	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.73	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 4/15/2013

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

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

T Please indicate detection limit if analyte is not detected.

I.D. No _____ 100008

Monitoring Point No. _____ CWMP005W

Sample Date _____ 4/15/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	68	SW846 6010C
BARIUM, DISSOLVED	65	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

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Sample Date 4/15/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP005W

Sample Date 4/15/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

^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: CWMP001W Well Spring Stream Other

Upgradient/Upstream Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

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

Depth to Water Level: 28.67 ft Measured from: Land Surface TOC

Casing Stickup: 1.23 ft Elevation of Water Level: 486.46 ft./MSL

Sampling Depth: 57 ft Volume of Water Column: 55.27 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): 4/15/2013 Sample Collection Time: 11:00

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): 1021826002 Final Lab Analysis CompletionDate: 4/26/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP001W

Sample Date 4/15/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.11	SM4500D
BICARBONATE	8	SM20 2321
CALCIUM, TOTAL	19.2	SW846 6010C
CALCIUM, DISSOLVED	17.2	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	28.3	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	420	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	11.8	SW846 6010C
MAGNESIUM, DISSOLVED	11.4	SW846 6010C
MANGANESE, TOTAL (ug/l)	74	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	56	SW846 6010C
NITRATE-NITROGEN	21.9	EPA 300
pH-FIELD (SU)	4.71	FIELD
pH-LAB (SU)	6.02	SM4500B
POTASSIUM, TOTAL	2.4	SW846 6010C
POTASSIUM, DISSOLVED	2.4	6SW846 010C
SODIUM, TOTAL	14.4	SW846 6010C
SODIUM, DISSOLVED	13.6	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	308	FIELD
SPEC. COND., LAB (umhos/cm)	282	EPA 120.1
SULFATE	5 ND	EPA 300
ALKALINITY	8	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	198	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	45.7	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 4/15/2013

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

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

T Please indicate detection limit if analyte is not detected.

I.D. No _____ 100008

Monitoring Point No. _____ CWMP001W

Sample Date _____ 4/15/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	96	SW846 6010C
BARIUM, DISSOLVED	89	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	23	SW846 6010C
ZINC, DISSOLVED	21	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP001W

Sample Date 4/15/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

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

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

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

I.D. No _____	100008
Monitoring Point No. _____	CWMP001W
Sample Date _____	4/15/2013

FORM 19 ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

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

<u>Constituent</u>	<u>CAS Number</u>



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DEPARTMENT OF ENVIRONMENTAL PROTECTION
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 (° 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: 64.84 ft Measured from: Land Surface TOC

Casing Stickup: 1.90 ft Elevation of Water Level: 317.86 ft./MSL

Sampling Depth: 0 ft Volume of Water Column: 54.43 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): 4/15/2013 Sample Collection Time: 13:00

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): 1021826003 Final Lab Analysis CompletionDate: 4/26/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP012W

Sample Date 4/15/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	SM4500D
BICARBONATE	70	SM20 2321
CALCIUM, TOTAL	38.5	SW846 6010C
CALCIUM, DISSOLVED	35.1	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	34.2	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	16100	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	9.9	SW846 6010C
MAGNESIUM, DISSOLVED	9.7	SW846 6010C
MANGANESE, TOTAL (ug/l)	850	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	690	SW846 6010C
NITRATE-NITROGEN	11.7	EPA 300
pH-FIELD (SU)	5.97	FIELD
pH-LAB (SU)	6.49	SM4500B
POTASSIUM, TOTAL	1.5	SW846 6010C
POTASSIUM, DISSOLVED	1.5	6SW846 010C
SODIUM, TOTAL	13.1	SW846 6010C
SODIUM, DISSOLVED	12.4	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	315	FIELD
SPEC. COND., LAB (umhos/cm)	329	EPA 120.1
SULFATE	4.6	EPA 300
ALKALINITY	70	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	222	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	56.5	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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

I.D. No. 100008

Monitoring Point No. CWMP012W

Sample Date 4/15/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	2.9	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No _____ 100008

Monitoring Point No. _____ CWMP012W

Sample Date _____ 4/15/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8.1	SW846 6010C
BARIUM, TOTAL	110	SW846 6010C
BARIUM, DISSOLVED	100	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP012W

Sample Date 4/15/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP012W

Sample Date 4/15/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

^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
05/15/2013

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 (° 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): 4/16/2013 Sample Collection Time: 10:26

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): 1022007001 Final Lab Analysis CompletionDate: 4/29/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP018S

Sample Date 4/16/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.51	SM4500D
BICARBONATE	179	SM20 2321
CALCIUM, TOTAL	56.4	SW846 6010C
CALCIUM, DISSOLVED	55.2	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	23	EPA 410.4
CHLORIDE	293	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	120	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	41.7	SW846 6010C
MAGNESIUM, DISSOLVED	42.1	SW846 6010C
MANGANESE, TOTAL (ug/l)	24	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	11	SW846 6010C
NITRATE-NITROGEN	17.8	EPA 300
pH-FIELD (SU)	8.02	FIELD
pH-LAB (SU)	8.17	SM4500B
POTASSIUM, TOTAL	15.5	SW846 6010C
POTASSIUM, DISSOLVED	15.7	6SW846 010C
SODIUM, TOTAL	157	SW846 6010C
SODIUM, DISSOLVED	156	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	1525	FIELD
SPEC. COND., LAB (umhos/cm)	1470	EPA 120.1
SULFATE	30.1	EPA 300
ALKALINITY	179	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	715	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	8.5	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	1.15	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. CWMP018S

Sample Date 4/16/2013

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

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

T Please indicate detection limit if analyte is not detected.

I.D. No _____ 100008

Monitoring Point No. _____ CWMP018S

Sample Date _____ 4/16/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	27	SW846 6010C
BARIUM, DISSOLVED	21	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP018S

Sample Date 4/16/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP018S

Sample Date 4/16/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

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

I.D. No	100008
Monitoring Point No.	CWMP018S
Sample Date	4/16/2013

FORM 19
ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

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

<u>Constituent</u>	<u>CAS Number</u>



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

Date Prepared/Revised
05/15/2013

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 (° 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): 4/16/2013 Sample Collection Time: 11:56

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): 1022007002 Final Lab Analysis CompletionDate: 4/26/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP017S

Sample Date 4/16/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.5	SM4500D
BICARBONATE	269	SM20 2321
CALCIUM, TOTAL	80.4	SW846 6010C
CALCIUM, DISSOLVED	77.3	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	12	EPA 410.4
CHLORIDE	632	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	190	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	73.9	SW846 6010C
MAGNESIUM, DISSOLVED	75.6	SW846 6010C
MANGANESE, TOTAL (ug/l)	47	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	40	SW846 6010C
NITRATE-NITROGEN	29.3	EPA 300
pH-FIELD (SU)	7.75	FIELD
pH-LAB (SU)	8.08	SM4500B
POTASSIUM, TOTAL	20.6	SW846 6010C
POTASSIUM, DISSOLVED	20.7	6SW846 010C
SODIUM, TOTAL	332	SW846 6010C
SODIUM, DISSOLVED	329	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	2593	FIELD
SPEC. COND., LAB (umhos/cm)	2600	EPA 120.1
SULFATE	42.4	EPA 300
ALKALINITY	269	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	1200	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	4.7	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.89	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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

I.D. No. 100008

Monitoring Point No. CWMP017S

Sample Date 4/16/2013

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

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

T Please indicate detection limit if analyte is not detected.

I.D. No _____ 100008

Monitoring Point No. _____ CWMP017S

Sample Date _____ 4/16/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	27	SW846 6010C
BARIUM, DISSOLVED	13	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	40	SW846 6010C
ZINC, DISSOLVED	37	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP017S

Sample Date 4/16/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP017S

Sample Date 4/16/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

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

I.D. No 100008
Monitoring Point No. CWMP017S
Sample Date 4/16/2013

FORM 19 ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

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

<u>Constituent</u>	<u>CAS Number</u>



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

Date Prepared/Revised
05/15/2013

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: 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: 71.21 ft Measured from: Land Surface TOC

Casing Stickup: -1.19 ft Elevation of Water Level: 454.60 ft./MSL

Sampling Depth: 85 ft Volume of Water Column: 42.28 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): 4/17/2013 Sample Collection Time: 11:01

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): 1022252001 Final Lab Analysis CompletionDate: 5/1/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP002W

Sample Date 4/17/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	1.59	SM4500D
BICARBONATE	73	SM20 2321
CALCIUM, TOTAL	56.6	SW846 6010C
CALCIUM, DISSOLVED	55.1	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	20	EPA 410.4
CHLORIDE	123	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	16.8	SW846 6010C
MAGNESIUM, DISSOLVED	17.3	SW846 6010C
MANGANESE, TOTAL (ug/l)	820	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	810	SW846 6010C
NITRATE-NITROGEN	3.5	EPA 300
pH-FIELD (SU)	4.78	FIELD
pH-LAB (SU)	5.78	SM4500B
POTASSIUM, TOTAL	2.8	SW846 6010C
POTASSIUM, DISSOLVED	2.8	6SW846 010C
SODIUM, TOTAL	23.9	SW846 6010C
SODIUM, DISSOLVED	23.5	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	619	FIELD
SPEC. COND., LAB (umhos/cm)	613	EPA 120.1
SULFATE	23.1	EPA 300
ALKALINITY	73	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	422	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	5.5	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.25	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 4/17/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	34.3	SW846 8260B
1,1-DICHLOROETHENE	1.3	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	6.4	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No _____ 100008

Monitoring Point No. _____ CWMP002W

Sample Date _____ 4/17/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	12	SW846 6010C
BARIUM, TOTAL	44	SW846 6010C
BARIUM, DISSOLVED	45	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP002W

Sample Date 4/17/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	32.6	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP002W

Sample Date 4/17/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

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

Date Prepared/Revised
05/15/2013

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 (° 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: 70.24 ft Measured from: Land Surface TOC

Casing Stickup: -1.37 ft Elevation of Water Level: 459.29 ft./MSL

Sampling Depth: 80 ft Volume of Water Column: 102.45 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): 4/17/2013 Sample Collection Time: 11:18

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): 1022252002 Final Lab Analysis CompletionDate: 5/1/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP004W

Sample Date 4/17/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.13	SM4500D
BICARBONATE	24	SM20 2321
CALCIUM, TOTAL	20.9	SW846 6010C
CALCIUM, DISSOLVED	20.9	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	36.5	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	6.2	SW846 6010C
MAGNESIUM, DISSOLVED	6.3	SW846 6010C
MANGANESE, TOTAL (ug/l)	6.3	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	5.9	SW846 6010C
NITRATE-NITROGEN	8.3	EPA 300
pH-FIELD (SU)	5.39	FIELD
pH-LAB (SU)	6.14	SM4500B
POTASSIUM, TOTAL	1.3	SW846 6010C
POTASSIUM, DISSOLVED	1.3	6SW846 010C
SODIUM, TOTAL	13.1	SW846 6010C
SODIUM, DISSOLVED	13.1	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	252	FIELD
SPEC. COND., LAB (umhos/cm)	232	EPA 120.1
SULFATE	5	EPA 300
ALKALINITY	24	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	203	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.16	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 4/17/2013

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

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

T Please indicate detection limit if analyte is not detected.

I.D. No _____ 100008

Monitoring Point No. _____ CWMP004W

Sample Date _____ 4/17/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	12	SW846 6010C
BARIUM, DISSOLVED	12	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP004W

Sample Date 4/17/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP004W

Sample Date 4/17/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

^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
05/15/2013

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^o 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: 80.3 ft Measured from: Land Surface TOC

Casing Stickup: -1.29 ft Elevation of Water Level: 443.91 ft./MSL

Sampling Depth: 100 ft Volume of Water Column: -7.78 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): 4/17/2013 Sample Collection Time: 13:13

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): 1022252003 Final Lab Analysis CompletionDate: 5/1/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP003W

Sample Date 4/17/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.12	SM4500D
BICARBONATE	23	SM20 2321
CALCIUM, TOTAL	23	SW846 6010C
CALCIUM, DISSOLVED	24.3	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	42.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	85	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	7	SW846 6010C
MAGNESIUM, DISSOLVED	7.1	SW846 6010C
MANGANESE, TOTAL (ug/l)	110	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	6.5	SW846 6010C
NITRATE-NITROGEN	8.7	EPA 300
pH-FIELD (SU)	5.49	FIELD
pH-LAB (SU)	6.02	SM4500B
POTASSIUM, TOTAL	1.5	SW846 6010C
POTASSIUM, DISSOLVED	1.4	6SW846 010C
SODIUM, TOTAL	14	SW846 6010C
SODIUM, DISSOLVED	14.8	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	264	FIELD
SPEC. COND., LAB (umhos/cm)	257	EPA 120.1
SULFATE	5.3	EPA 300
ALKALINITY	23	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	210	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	4.61	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 4/17/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	2.2	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No _____ 100008

Monitoring Point No. _____ CWMP003W

Sample Date _____ 4/17/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	15	SW846 6010C
BARIUM, DISSOLVED	14	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP003W

Sample Date 4/17/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP003W

Sample Date 4/17/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

^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
05/15/2013

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 (° 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: 6.91 ft Measured from: Land Surface TOC

Casing Stickup: 1.50 ft Elevation of Water Level: 446.49 ft./MSL

Sampling Depth: 33 ft Volume of Water Column: 43.46 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): 4/17/2013 Sample Collection Time: 9:44

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): 1022252004 Final Lab Analysis CompletionDate: 5/1/2013

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 ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	SM4500D
BICARBONATE	10	SM20 2321
CALCIUM, TOTAL	18.3	SW846 6010C
CALCIUM, DISSOLVED	18.8	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	64.1	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	8.8	SW846 6010C
MAGNESIUM, DISSOLVED	8.8	SW846 6010C
MANGANESE, TOTAL (ug/l)	5.6 ND	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	6.1	SW846 6010C
NITRATE-NITROGEN	11	EPA 300
pH-FIELD (SU)	5.15	FIELD
pH-LAB (SU)	5.77	SM4500B
POTASSIUM, TOTAL	2.1	SW846 6010C
POTASSIUM, DISSOLVED	2	6SW846 010C
SODIUM, TOTAL	31	SW846 6010C
SODIUM, DISSOLVED	32.4	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	375	FIELD
SPEC. COND., LAB (umhos/cm)	336	EPA 120.1
SULFATE	13.4	EPA 300
ALKALINITY	10	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	232	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.1 ND	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

^T Please indicate detection limit if analyte is not detected.** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).
Remaining quarterly samples only require total metals analysis.

I.D. No. 100008

Monitoring Point No. CWMP007W

Sample Date 4/17/2013

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

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

T Please indicate detection limit if analyte is not detected.

I.D. No _____ 100008

Monitoring Point No. _____ CWMP007W

Sample Date _____ 4/17/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	49	SW846 6010C
BARIUM, DISSOLVED	48	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP007W

Sample Date 4/17/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP007W

Sample Date 4/17/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1.1	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

^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
05/15/2013

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 (° 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: 3.01 ft Measured from: Land Surface TOC

Casing Stickup: 2.80 ft Elevation of Water Level: 419.29 ft./MSL

Sampling Depth: 19 ft Volume of Water Column: 3.23 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): 4/18/2013 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): 1022556001 Final Lab Analysis Completion Date: 5/3/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP008W

Sample Date 4/18/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	4.83	SM4500D
BICARBONATE	456	SM20 2321
CALCIUM, TOTAL	78.7	SW846 6010C
CALCIUM, DISSOLVED	79.5	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	33	EPA 410.4
CHLORIDE	47.7	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	32600	SW846 6010C
IRON, DISSOLVED (ug/l)	29900	SW846 6010C
MAGNESIUM, TOTAL	37.2	SW846 6010C
MAGNESIUM, DISSOLVED	34.8	SW846 6010C
MANGANESE, TOTAL (ug/l)	18100	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	18300	SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	5.87	FIELD
pH-LAB (SU)	6.46	SM4500B
POTASSIUM, TOTAL	10	SW846 6010C
POTASSIUM, DISSOLVED	9	6SW846 010C
SODIUM, TOTAL	53.2	SW846 6010C
SODIUM, DISSOLVED	51.1	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	1017	FIELD
SPEC. COND., LAB (umhos/cm)	995	EPA 120.1
SULFATE	7.2	EPA 300
ALKALINITY	456	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	546	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	18.7	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	28.9	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 4/18/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	3	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	5.6	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No _____ 100008

Monitoring Point No. _____ CWMP008W

Sample Date _____ 4/18/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	170	SW846 6010C
BARIUM, DISSOLVED	160	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP008W

Sample Date 4/18/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	22.4	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	2.4	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP008W

Sample Date 4/18/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

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

Date Prepared/Revised
05/15/2013

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 (° 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: 9.21 ft Measured from: Land Surface TOC

Casing Stickup: 2.70 ft Elevation of Water Level: 394.99 ft./MSL

Sampling Depth: 16 ft Volume of Water Column: 6.85 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): 4/18/2013 Sample Collection Time: 10:54

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): 1022556002 Final Lab Analysis CompletionDate: 5/1/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP009W

Sample Date 4/18/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	24.1	SM4500D
BICARBONATE	581	SM20 2321
CALCIUM, TOTAL	135	SW846 6010C
CALCIUM, DISSOLVED	138	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	94	EPA 410.4
CHLORIDE	379	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	34200	SW846 6010C
IRON, DISSOLVED (ug/l)	31800	SW846 6010C
MAGNESIUM, TOTAL	69.2	SW846 6010C
MAGNESIUM, DISSOLVED	63.7	SW846 6010C
MANGANESE, TOTAL (ug/l)	11300	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	11500	SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.05	FIELD
pH-LAB (SU)	6.54	SM4500B
POTASSIUM, TOTAL	36.5	SW846 6010C
POTASSIUM, DISSOLVED	34.2	6SW846 010C
SODIUM, TOTAL	150	SW846 6010C
SODIUM, DISSOLVED	152	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	2287	FIELD
SPEC. COND., LAB (umhos/cm)	2230	EPA 120.1
SULFATE	3.6	EPA 300
ALKALINITY	581	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	1240	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	44.7	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	93.4	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 4/18/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	2.5	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	3.5	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP009W

Sample Date 4/18/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	680	SW846 6010C
BARIUM, DISSOLVED	650	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP009W

Sample Date 4/18/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	26.2	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	3.5	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	18.6	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP009W

Sample Date 4/18/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	12.1	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

^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
05/15/2013

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 (° 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: 8.81 ft Measured from: Land Surface TOC

Casing Stickup: 2.10 ft Elevation of Water Level: 352.09 ft./MSL

Sampling Depth: 17 ft Volume of Water Column: 7.04 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): 4/18/2013 Sample Collection Time: 11:18

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): 1022556003 Final Lab Analysis CompletionDate: 5/1/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP010W

Sample Date 4/18/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	2.02	SM4500D
BICARBONATE	71	SM20 2321
CALCIUM, TOTAL	29	SW846 6010C
CALCIUM, DISSOLVED	29.5	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7	EPA 410.4
CHLORIDE	120	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	240	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	16.4	SW846 6010C
MAGNESIUM, DISSOLVED	15.7	SW846 6010C
MANGANESE, TOTAL (ug/l)	88	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	8.1	SW846 6010C
NITRATE-NITROGEN	5.6	EPA 300
pH-FIELD (SU)	5.88	FIELD
pH-LAB (SU)	6.95	SM4500B
POTASSIUM, TOTAL	6.2	SW846 6010C
POTASSIUM, DISSOLVED	5.6	6SW846 010C
SODIUM, TOTAL	74.5	SW846 6010C
SODIUM, DISSOLVED	74.7	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	1078	FIELD
SPEC. COND., LAB (umhos/cm)	650	EPA 120.1
SULFATE	25.9	EPA 300
ALKALINITY	71	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	349	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	3.4	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	2.32	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

^T Please indicate detection limit if analyte is not detected.** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).
Remaining quarterly samples only require total metals analysis.

I.D. No. 100008

Monitoring Point No. CWMP010W

Sample Date 4/18/2013

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

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

T Please indicate detection limit if analyte is not detected.

I.D. No. 100008

Monitoring Point No. CWMP010W

Sample Date 4/18/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	39	SW846 6010C
BARIUM, DISSOLVED	33	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	7.4	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP010W

Sample Date 4/18/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP010W

Sample Date 4/18/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

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

Date Prepared/Revised
05/15/2013

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 (° 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: 9.28 ft Measured from: Land Surface TOC

Casing Stickup: 2.53 ft Elevation of Water Level: 302.69 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): 4/19/2013 Sample Collection Time: 9:38

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): 1022763001 Final Lab Analysis CompletionDate: 5/1/2013

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 4/19/2013

FORM 19
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES
ANALYTES

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

ANALYTE	VALUE ^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.11	SM4500D
BICARBONATE	5	SM20 2321
CALCIUM, TOTAL	4.4	SW846 6010C
CALCIUM, DISSOLVED	4.7	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	2.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	410	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	1.1	SW846 6010C
MAGNESIUM, DISSOLVED	1.1	SW846 6010C
MANGANESE, TOTAL (ug/l)	13	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	13	SW846 6010C
NITRATE-NITROGEN	0.32	EPA 300
pH-FIELD (SU)	4.83	FIELD
pH-LAB (SU)	6.45	SM4500B
POTASSIUM, TOTAL	0.56 ND	SW846 6010C
POTASSIUM, DISSOLVED	0.5 ND	6SW846 010C
SODIUM, TOTAL	3	SW846 6010C
SODIUM, DISSOLVED	3.1	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	58	FIELD
SPEC. COND., LAB (umhos/cm)	51	EPA 120.1
SULFATE	13	EPA 300
ALKALINITY	5	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	13	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	1.96	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 4/19/2013

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

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

T Please indicate detection limit if analyte is not detected.

I.D. No. 100008

Monitoring Point No. CWMP016W

Sample Date 4/19/2013

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

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	11 ND	SW846 6010C
BARIUM, DISSOLVED	10 ND	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

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

I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 4/19/2013

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROENZENE	1 ND	SW846 8260B
1,3-DICHLOROENZENE	1 ND	SW846 8260B
1,4-DICHLOROENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 4/19/2013

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

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On List - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
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ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

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

I.D. No	100008
Monitoring Point No.	CWMP016W
Sample Date	4/19/2013

FORM 19
ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

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

<u>Constituent</u>	<u>CAS Number</u>