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Subject:
January 2017 Monthly Data Report
Site Management/RSO
Fort Edward Landfill
NYSDEC Site No. 558001
Contract No. D007618-39

Date:
March 24, 2017

Contact:
Daniel Lang

Dear Mr. Long:

Phone:
518.250.7300

Arcadis CE, Inc. (Arcadis) has prepared this letter to summarize the results of the January 2017 monthly leachate collection and treatment system samples that were collected at the Fort Edward Landfill (Site). On January 19th, 2017, the monthly samples were collected from the treatment system influent (EW-4), treatment Cell-3 effluent collection chamber, the polishing pond effluent, and the Clarifier catch effluent, which was online beginning December 15, 2016.

Email:
daniel.lang@arcadis.com

Treatment plant flow during the January monthly sampling event was approximately 10.4 gallons per minute (gpm). Due to ongoing upgrades to the system, Treatment Cell-1 is currently offline and Treatment Cell-2 had no flow, therefore no samples were collected from these locations. The monthly samples were submitted to Con-test Analytical for analysis of volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), metals, total dissolved solids (TDS), and total suspended solids (TSS).

Our ref:
00266434.0000

The analytical results are discussed in the sections below and have been summarized in Table 1. The laboratory analytical data will be submitted to NYSDEC's EIMS Administrator in the required EQUIS EDD format.

Analytical Results

VOCs

As shown in Table 1, acetone was detected in the Clarifier catch effluent sample and estimated concentrations were detected in the influent, polishing pond effluent, and the Cell-3 chamber effluent samples. Acetone is a commonly known laboratory contaminant. Along with acetone; 1,4-dichlorobenzene, benzene, chlorobenzene, cis-1,2-dichloroethylene, and isopropylbenzene were also detected at an estimated concentration in the influent sample. Benzene, chlorobenzene, and cis-1,2-dichloroethylene were detected at estimated concentrations in the Clarifier catch effluent sample. These were the only VOCs detected during the January 2017 sampling event. VOC concentrations were consistent with previous 2016 monthly data with exception of the low estimated concentrations of cis-1,2-dichloroethylene, and isopropylbenzene, which have not been detected in previous samples.

PCBs

PCB-1221 was the only PCB Aroclor detected in the influent and the Clarifier catch effluent samples. PCBs were not detected in the Cell-3 sample or the effluent polishing pond sample during the January 2017 sampling event (Table 1). During previous monthly sampling events PCB Aroclor 1232 or 1016 have generally been detected in the influent or Clarifier catch samples. All other PCB concentrations were consistent with previous 2016 monthly data.

Metals

Under the new sampling program several more metals were analyzed for and detected as compared to the previous laboratory sampling program. Arsenic, barium, calcium, iron, magnesium, manganese, potassium, and sodium were all detected in the influent sample as well as two or more of the effluent samples (effluent polishing pond, Cell-3, Clarifier catch). Aluminum, copper, lead, nickel, and zinc were detected in one or more of the effluent samples, but not detected in the influent sample during the month of January. The metal concentrations were consistent with previous 2016 monthly data except for iron concentrations in all four locations and manganese concentration in the effluent sample. Iron and manganese concentrations continue to fluctuate between each sampling event.

TDS and TSS

Concentrations of TDS and TSS continue to fluctuate between sampling events. The TSS concentration decreased or was consistent in all four sample locations as compared to the last several sampling results in 2016. The TDS and TSS concentrations exiting the treatment Cells and system effluent (Polishing Pond) are expected to decline following the completion and startup of the pre-treatment system process upgrades.

Leachate Collection and Treatment System Operation and Maintenance

The leachate collection system operated with minimal downtime during this period. Below are some noted highlights:

- After evaluation of the extraction well EW-4 sludge and pump operation in December, a pitless pump adapter was installed on January 4, 2017. This installation allows for routine cleaning and maintenance of the pump. A new Grundfos 1-horsepower, 3450 rpm pump end was installed on January 8, 2017 to maximize flow rate and maintain leachate collection. With the new pump end,

a maximum flow rate of 20 gpm was obtained and the leachate is now set below collection drain inverts.

- The monitoring well network and extraction well collection system was gauged on January 12, 2017 as part of the ongoing remedial system optimization. Transducers were deployed in extraction well EW-1, and monitoring wells MW-5, MW-NEW, and PZ-2 on January 30 and 31, 2017. The transducers monitor water levels at the crown of the landfill and Eastern toe of slope.
- A drying bed was constructed on the southwestern corner of Cell 1 and connected to EW-4 via force main installation as part of the EW-4 optimization the week of January 30, 2017. It was determined that the collection sump along the Eastern toe of the landfill was introduced to EW-4 at 7.5 gpm, and the collection trench along the Southern toe of the landfill inflowed at 10 gpm.

Leachate Collection and Treatment System Optimization

- Arcadis is currently in the process of making system upgrades as described in the Fort Edward WA 2015 Work Scope, and as outlined in the Remedial System Optimization (HRP, 2015). The first and second phases of upgrades have been completed to date. These elements were summarized in the October and November 2016 Status Reports (Arcadis 2016), respectively.

The third phase of the upgrades will be continually implemented in the first quarter of 2017. These include the final electrical power connections, procurement and installation of the process control instrumentation, programmable logic controller programming upgrades, and the first phase of the iron removal enhancements.

During February 2017, the following items are expected to be completed:

- Evaluate IPC and treatment system response.
- Finalize design for iron removal enhancement equipment.
- Initiate electrical and process controls work.

If you have any questions, please do not hesitate to contact me or Jeremy Wyckoff.

Sincerely,



Daniel Lang
Associate Vice President

Copies:

Jeremy Wyckoff, Arcadis
File

Enclosures:

Table

- 1 Treatment System – January Analytical Data

Table 1. January Treatment System Analytical Data, Fort Edward Landfill
Fort Edward, New York. NYSDEC Site No. 558001

		INFLUENT	CLARIFIER CATCH	CELL 3	EFFLUENT
Chemical Name	Units	1/19/2017	1/19/2017	1/19/2017	1/19/2017
VOCs					
1,1,1-TRICHLOROETHANE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-TRICHLOROETHANE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-DICHLOROETHANE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-TRICHLOROBENZENE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/L	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-DICHLOROETHANE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-DICHLOROETHYLENE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-DICHLOROPROPANE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-DICHLOROBENZENE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-DICHLOROBENZENE	ug/L	0.17 J	1.0 U	1.0 U	1.0 U
2-HEXANONE	ug/L	10 U	10 U	10 U	10 U
ACETONE	ug/L	33 J	130	19 J	24 J
BENZENE	ug/L	0.29 J	0.28 J	1.0 U	1.0 U
BROMOCHLOROMETHANE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
BROMODICHLOROMETHANE	ug/L	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
BROMOMETHANE	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
2-BUTANONE (MEK)	ug/L	20 U	20 U	20 U	20 U
CARBON DISULFIDE	ug/L	4.0 U	4.0 U	4.0 U	4.0 U
CARBON TETRACHLORIDE	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
CHLOROBENZENE	ug/L	0.65 J	0.53 J	1.0 U	1.0 U
CHLORODIBROMOMETHANE	ug/L	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
CIS-1,2-DICHLOROETHYLENE	ug/L	0.46 J	0.42 J	1.0 U	1.0 U
TRANS-1,2-DICHLOROETHYLENE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
CIS-1,3-DICHLOROPROPENE	ug/L	0.5 U	0.5 U	0.5 U	0.5 U
CYCLOHEXANE	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
DICHLORODIFLUOROMETHANE	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
ETHYLBENZENE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
ISOPROPYLBENZENE (CUMENE)	ug/L	0.13 J	1.0 U	1.0 U	1.0 U
M,P-XYLENES	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
METHYL ACETATE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
METHYL TERT-BUTYL ETHER (MTBE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	10 U	10 U	10 U	10 U
METHYLCYCLOHEXANE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
METHYLENE CHLORIDE	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
STYRENE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
TETRACHLOROETHYLENE(PCE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
TOLUENE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-TRICHLOROETHYLENE	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
TRANS-1,3-DICHLOROPROPENE	ug/L	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DIOXANE	ug/L	50 U	50 U	50 U	50 U
TRICHLOROETHYLENE (TCE)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
TRICHLOROFLUOROMETHANE	ug/L	1.0 U	2.0 U	2.0 U	2.0 U
VINYL CHLORIDE	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
XYLENES, TOTAL	ug/L	3.0 U	3.0 U	3.0 U	3.0 U
1,1,1,2- TETRACHLOROETHANE	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

U - The compound was analyzed for by not detected. The associated value is the compound quantitation limit.

J - The concentration is an approximate value.

mg/L - milligrams per liter

ug/L micrograms per liter

Table 1. January Treatment System Analytical Data, Fort Edward Landfill
Fort Edward, New York. NYSDEC Site No. 558001

		INFLUENT	CLARIFIER CATCH	CELL 3	EFFLUENT
Chemical Name	Units	1/19/2017	1/19/2017	1/19/2017	1/19/2017
PCBs					
PCB-1016 (AROCLOR 1016)	ug/L	0.2 U	0.2 U	0.2 U	0.2 U
PCB-1221 (AROCLOR 1221)	ug/L	2.2	2.0	0.2 U	0.2 U
PCB-1232 (AROCLOR 1232)	ug/L	0.2 U	0.2 U	0.2 U	0.2 U
PCB-1242 (AROCLOR 1242)	ug/L	0.2 U	0.2 U	0.2 U	0.2 U
PCB-1248 (AROCLOR 1248)	ug/L	0.2 U	0.2 U	0.2 U	0.2 U
PCB-1254 (AROCLOR 1254)	ug/L	0.2 U	0.2 U	0.2 U	0.2 U
PCB-1260 (AROCLOR 1260)	ug/L	0.2 U	0.2 U	0.2 U	0.2 U
PCB-1262 (AROCLOR 1262)	ug/L	0.2 U	0.2 U	0.2 U	0.2 U
PCB-1268 (AROCLOR 1268)	ug/L	0.2 U	0.2 U	0.2 U	0.2 U
METALS					
ALUMINUM	mg/L	0.05 U	0.055	0.05 U	0.120
ANTIMONY	mg/L	0.05 U	0.050 U	0.05 U	0.050 U
ARSENIC	mg/L	0.02	0.023	0.01 U	0.013
BARIUM	ug/L	130	68	59	50
BERYLLIUM	mg/L	0.004 U	0.004 U	0.004 U	0.004 U
CADMIUM	mg/L	0.004 U	0.004 U	0.004 U	0.004 U
CALCIUM	mg/L	99	95	110	99
CHROMIUM, TOTAL	ug/L	10 U	10 U	10.0 U	10 U
COBALT	ug/L	50 U	50 U	50 U	50 U
COPPER	mg/L	0.01 U	0.015	0.01 U	0.01 U
IRON	mg/L	71	21	3.0	2.7
LEAD	mg/L	0.01 U	0.038	0.010 U	0.01 U
MAGNESIUM	mg/L	26	25	21	21
MANGANESE	ug/L	1900	1800	830.0	880
MERCURY	mg/L	0.0001 U	0.0001 U	0.0001 U	0.0001 U
NICKEL	mg/L	0.01 U	0.01 U	0.013	0.01 U
POTASSIUM	mg/L	5.5	5.7	9.1	8.5
SELENIUM	mg/L	0.05 U	0.05 U	0.05 U	0.05 U
SILVER	mg/L	0.005 U	0.005 U	0.005 U	0.005 U
SODIUM	mg/L	57	55	48	40
THALLIUM	mg/L	0.05 U	0.05 U	0.05 U	0.05 U
VANADIUM	ug/L	10 U	10 U	10 U	10 U
ZINC	mg/L	0.02 U	0.076	0.02	0.02 U
OTHER					
TOTAL DISSOLVED SOLIDS	mg/L	510	460	490	440
TOTAL SUSPENDED SOLIDS	mg/L	42	47	10	15

Notes:

U - The compound was analyzed for by not detected. The associated value is the compound quantitation limit.

mg/L - milligrams per liter

ug/L micrograms per liter