

Payson Long
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
Bureau of Program Management
625 Broadway, 12th Floor
Albany, NY 12233-7012

Arcadis CE, Inc.
855 Route 146
Suite 210
Clifton Park
New York 12065
Tel 518 250 7300
Fax 518 250 7301
www.arcadis.com

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

Date:
May 9, 2017

Contact:
Dan Lang

Dear Mr. Long:

Arcadis CE, Inc. (Arcadis) has prepared this letter report to summarize the leachate collection and treatment system operation, maintenance, and monitoring (OM&M) activities completed during the March reporting period. A summary of the analytical results of the March 2017 monthly system samples is also provided.

Phone:
518.250.7300

Email:
daniel.lang@arcadis.com

Leachate Collection and Treatment System Operation and Maintenance

The leachate collection system operated with minimal downtime during this period. Approximately 387,977 gallons of leachate were collected and treated through the system during March 2017. The corresponding average leachate recovery rate for the month was approximately 8.5 gallons per minute (gpm).

Our ref:
00266434.0000

System Optimization

Arcadis is currently in the process of upgrading the treatment system 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. These elements were summarized in the previous Monthly Reports (Arcadis 2016 and 2017), respectively. The third phase of remedial system optimization upgrades completed in March 2017 included the following:

- Installation and programming of the chemical (oxidizer, coagulant, and flocculant) metering pumps;

- Installation of the rapid mix and flocculant chamber mixers;
- Installation of the flocculant mixing tank skid;
- Startup and testing of treatment system equipment; and
- Extraction Well 2 (EW-2) was brought online on March 30, 2017, the baseline recovery rate was measured at approximately at 0.3 gpm.

System Sampling

On March 29th, 2017, the monthly samples were collected from the treatment system influent (EW-4), treatment system equipment Inclined Plate Clarifier (IPC), treatment Cell-3 effluent collection chamber, the Polishing Pond effluent, and the Clarifier Catch. The Post-IPC sample was added this month to the system sampling program to evaluate the iron reduction following the addition of chemical into the treatment processes.

Based on the current treatment flow process, Treatment Cell-1 is currently offline. The Treatment Cell-2 by-pass overflow pipe was frozen; therefore, a sample was not collected from this location. The routine 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). The Post-IPC sample was analyzed for metals, TDS, and TSS only.

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 EQiS EDD format.

Analytical Results

VOCs

As shown in Table 1, estimated concentrations of acetone were reported in each sample, however these detections are most likely attributable to laboratory contamination. Chlorobenzene, 1,4-dichlorobenzene, and cis-1,2-dichloroethylene were also reported at estimated concentrations in the influent sample. Benzene, bromodichloromethane, 2-butanone (MEK), chlorobenzene, cis-1,2-dichloroethylene, and styrene were detected in the Clarifier Catch sample. These were the only VOCs reported during the March 2017 sampling event. VOC concentrations were consistent with previous monthly data with exception of the estimated concentration of styrene, which had not been detected in recent sampling events.

PCBs

PCB-1016 was the only PCB Aroclor detected in the influent and the Clarifier Catch samples. PCBs were not detected in the Cell-3 or the Polishing Pond effluent sample during the March 2017 sampling event (Table 1). During previous monthly sampling events, PCB Aroclor 1221, 1232, or 1242 had generally been detected in the influent or Clarifier Catch samples.

Metals

Under the newly employed sampling program (initiated to evaluate treatment system effectiveness), several more metals were analyzed for and detected as compared to the previous sampling program. Aluminum, antimony, calcium, iron, magnesium, manganese, potassium, and sodium were all detected in the influent sample as well as one or more of the post-treatment locations (e.g., Post-IPC, Clarifier Catch,

and Cell-3) and effluent samples. Zinc was the only metal detected in the Clarifier Catch sample, but not in the influent sample. The detected zinc concentration was 0.027 milligrams per liter (mg/L), slightly higher than the laboratory reporting limit of 0.02 mg/L.

TDS and TSS

Concentrations of TDS and TSS continue to fluctuate between sampling events. During the March sampling event, TSS was detected in all samples, and TDS concentrations are consistent with previous sampling events.

Next Reporting Period Planned Activities

During April, the following elements will also be completed:

- Substantial completion of programmable logic controller programming;
- Evaluate extraction wells EW-1 and EW-3, and procure replacement components, as needed;
- Procure replacement parts for the sludge filter press equipment; and
- Continuation of iron and solids treatment and processing.

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

Sincerely,

Arcadis CE, Inc.



Daniel Lang
Associate Vice President

Copies:

Jeremy Wyckoff, Arcadis

File

Enclosures:

Table

- 1 March Treatment System Analytical Data

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

		INFLUENT	POST-IPC	CLARIFIER CATCH	CELL 3	EFFLUENT
Chemical Name	Units	3/29/2017	3/29/2017	3/29/2017	3/29/2017	3/29/2017
VOCs						
1,1,1-TRICHLOROETHANE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,1,2-TRICHLOROETHANE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,1-DICHLOROETHANE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,2,4-TRICHLOROBENZENE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	5.0 U	NS	5.0 U	5.0 U	5.0 U
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/L	0.5 U	NS	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,2-DICHLOROETHANE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,1-DICHLOROETHYLENE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,2-DICHLOROPROPANE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,3-DICHLOROBENZENE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,4-DICHLOROBENZENE	ug/L	0.16 J	NS	1.0 U	1.0 U	1.0 U
2-HEXANONE	ug/L	10 U	NS	10 U	10 U	10 U
ACETONE	ug/L	19 J	NS	27 J	23 J	16 J
BENZENE	ug/L	1.0 U	NS	0.16 J	1.0 U	1.0 U
BROMOCHLOROMETHANE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
BROMODICHLOROMETHANE	ug/L	0.5 U	NS	1.2	0.5 U	0.5 U
BROMOFORM	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
BROMOMETHANE	ug/L	2.0 U	NS	2.0 U	2.0 U	2.0 U
2-BUTANONE (MEK)	ug/L	20 U	NS	4.0 J	20 U	20 U
CARBON DISULFIDE	ug/L	4.0 U	NS	4.0 U	4.0 U	4.0 U
CARBON TETRACHLORIDE	ug/L	5.0 U	NS	5.0 U	5.0 U	5.0 U
CHLOROBENZENE	ug/L	0.25 J	NS	0.20 J	1.0 U	1.0 U
CHLORODIBROMOMETHANE	ug/L	0.5 U	NS	0.5 U	0.5 U	0.5 U
CHLOROETHANE	ug/L	2.0 U	NS	2.0 U	2.0 U	2.0 U
CIS-1,2-DICHLOROETHYLENE	ug/L	0.5 J	NS	0.38 J	1.0 U	1.0 U
TRANS-1,2-DICHLOROETHYLENE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
CIS-1,3-DICHLOROPROPENE	ug/L	0.5 U	NS	0.5 U	0.5 U	0.5 U
CYCLOHEXANE	ug/L	5.0 U	NS	5.0 U	5.0 U	5.0 U
DICHLORODIFLUOROMETHANE	ug/L	2.0 U	NS	2.0 U	2.0 U	2.0 U
ETHYLBENZENE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
ISOPROPYLBENZENE (CUMENE)	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
M,P-XYLENES	ug/L	2.0 U	NS	2.0 U	2.0 U	2.0 U
METHYL ACETATE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
METHYL TERT-BUTYL ETHER (MTBE)	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	10 U	NS	10 U	10 U	10 U
METHYLCYCLOHEXANE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
METHYLENE CHLORIDE	ug/L	5.0 U	NS	5.0 U	5.0 U	5.0 U
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
STYRENE	ug/L	1.0 U	NS	0.29 J	1.0 U	1.0 U
TETRACHLOROETHYLENE(PCE)	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
TOLUENE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
1,2,3-TRICHLOROBENZENE	ug/L	5.0 U	NS	5.0 U	5.0 U	5.0 U
TRANS-1,3-DICHLOROPROPENE	ug/L	0.5 U	NS	0.5 U	0.5 U	0.5 U
1,4-DIOXANE	ug/L	50 U	NS	50 U	50 U	50 U
TRICHLOROETHYLENE (TCE)	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U
TRICHLOROFLUOROMETHANE	ug/L	2.0 U	NS	2.0 U	2.0 U	2.0 U
VINYL CHLORIDE	ug/L	2.0 U	NS	2.0 U	2.0 U	2.0 U
XYLENES, TOTAL	ug/L	3.0 U	NS	3.0 U	3.0 U	3.0 U
1,1,1,2- TETRACHLOROETHANE	ug/L	1.0 U	NS	1.0 U	1.0 U	1.0 U

Notes:

U - The compound was analyzed for but 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

NS - Not Sampled

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

		INFLUENT	POST-IPC	CLARIFIER CATCH	CELL 3	EFFLUENT
Chemical Name	Units	3/29/2017	3/29/2017	3/29/2017	3/29/2017	3/29/2017
PCBs						
PCB-1016 (AROCOR 1016)	ug/L	0.81	NS	0.72	0.2 U	0.2 U
PCB-1221 (AROCOR 1221)	ug/L	0.2 U	NS	0.2 U	0.2 U	0.2 U
PCB-1232 (AROCOR 1232)	ug/L	0.2 U	NS	0.2 U	0.2 U	0.2 U
PCB-1242 (AROCOR 1242)	ug/L	0.2 U	NS	0.2 U	0.2 U	0.2 U
PCB-1248 (AROCOR 1248)	ug/L	0.2 U	NS	0.2 U	0.2 U	0.2 U
PCB-1254 (AROCOR 1254)	ug/L	0.2 U	NS	0.2 U	0.2 U	0.2 U
PCB-1260 (AROCOR 1260)	ug/L	0.2 U	NS	0.2 U	0.2 U	0.2 U
PCB-1262 (AROCOR 1262)	ug/L	0.2 U	NS	0.2 U	0.2 U	0.2 U
PCB-1268 (AROCOR 1268)	ug/L	0.2 U	NS	0.2 U	0.2 U	0.2 U
METALS						
ALUMINIUM	mg/L	0.06	0.72	0.65	0.065	0.16
ANTIMONY	mg/L	0.052	0.051	0.051	0.056	0.055
ARSENIC	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
BARIUM	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
BERYLLIUM	mg/L	0.004 U	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	0.004 U
CALCIUM	mg/L	90	88	88	92	92
CHROMIUM, TOTAL	ug/L	10 U	10.0 U	10 U	10 U	10 U
COBALT	ug/L	50 U	50.0 U	50 U	50 U	50 U
COPPER	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
IRON	mg/L	10	0.88	0.89	1.7	1.1
LEAD	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
MAGNESIUM	mg/L	23	23	22	17	18
MANGANESE	mg/L	1.7	1.4	1.4	0.66	0.34
MERCURY	mg/L	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
NICKEL	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
POTASSIUM	mg/L	3.4	3.6	3.6	4.0	3.4
SELENIUM	mg/L	0.05 U	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	0.005 U
SODIUM	mg/L	47	60	59	36	31
THALLIUM	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
VANADIUM	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
ZINC	mg/L	0.02 U	0.02 U	0.027	0.02 U	0.02 U
OTHER						
TOTAL DISSOLVED SOLIDS	mg/L	470	520	520	450	430
TOTAL SUSPENDED SOLIDS	mg/L	22	17	40	11	9

Notes:

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mg/L - milligrams per liter

ug/L - micrograms per liter

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