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January 19, 2016

Randy Whitcher, P.E., Regional Engineer
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, 11th Floor
Albany, New York 12233-7014

Re: Town of Clarkstown Landfill
Quarterly Monitoring Program, Third Quarter 2015
Surface Water Sampling/Landfill Gas Monitoring/Vector Survey
H2M Project No. CLKT15-02

Dear Mr. Whitcher:

As the engineering consultant for the Town of Clarkstown, this correspondence will serve as the quarterly report for the surface water sampling, landfill gas monitoring, and vector survey conducted during the third quarter of 2015 for the Town of Clarkstown Landfill located on Route 303 in West Nyack, NY.

The monitoring program was conducted on September 17, 2015, and included landfill gas monitoring, vector surveying and surface water sampling. Samples were analyzed by Pace Analytical, Inc. in Melville, NY (NYSDOH ID No. 10478). The landfill program was conducted in accordance with the approved Environmental and Facility Monitoring Plan dated January 4, 2001, and as modified on July 13, 2005. A site plan entitled Figure 1.0 Monitoring Well and Sampling Locations is enclosed with this correspondence.

Landfill Gas Monitoring

Landfill gas monitoring consisted of surveying the nine existing gas monitoring wells (GM-1, GM-2, GM-3, GM-4, GM-5, GM-6, GM-8, GM-9 and GM-10). Table 1 identifies the landfill gas monitoring wells and their corresponding concentrations of carbon monoxide, oxygen, lower explosive limit (LEL %) for methane, and hydrogen sulfide as monitored on September 17, 2015 using a LANDTEC GEM 2000 PLUS landfill gas meter. Weather conditions that day were sunny, and in the approximate range of 60s to 80s degrees Fahrenheit.

The methane (% volume in air) concentrations ranged from 0.1% volume in air in some of the gas monitoring wells to 0.9% volume in air in gas monitoring well GM-9. As shown in Table 1, hydrogen sulfide was detected during the third quarter 2015 monitoring event in gas monitoring well GM-4 at a concentration of 1 ppm. The minimum oxygen concentration detected was 2.9% in gas monitoring well GM-9.

Vector Monitoring

The vegetated landfill cover system was inspected during the monitoring program. No potential vectors such as wildlife, rodents, scavenger birds, or other insects were observed.

Surface Water Sampling

Surface water samples were collected from sampling locations indicated on Figure 1.0. Samples were analyzed for the routine suite of parameters based on NYSDEC Part 360 requirements as identified in 6 NYCRR Part 360-2.11 (d)(6). The analyses included leachate indicators and inorganic parameters associated with the routine

requirements. The laboratory test results were compared to the NYSDEC Class GA groundwater standards and guidance values as identified in the Division of Water Technical and Operational Guidance Series (TOGS) (1.1.1) – Ambient Water Quality Standards and Guidance Values dated June 1998, and the New York State regulation 6 NYCRR Part 703. Those leachate indicators and inorganic parameters that were detected at concentrations exceeding the NYSDEC standards or guidance values are indicated in the enclosed Table 2. Additionally, a set of the Pace Analytical Services, Inc. data packages is enclosed on CD-ROM for your records, and includes the following: (1) Sample Data Summary Package, (2) Metals Data Packages, (3) Wet Chemistry Data Package, and (4) Analytical Data Package.

Surface Water samples were collected from 7 locations (SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, and SW-7) on September 17, 2015. A laboratory blind duplicate sample (BD-9/17/15) was collected from surface water location SW-4. The laboratory data results and highlighted exceedances are shown on Table 2. As indicated in Table 2, some of the total metal concentrations were in exceedance of the standards or guidance values, but one of these metals did not exceed the standard or guidance value in the dissolved metal analysis, and others decreased in concentration when observing the total metal results versus the dissolved metal results. Therefore, at least some of the metal concentrations may be attributed to sample turbidity.

If you should have any questions, please contact the undersigned at 631-756-8000, extension 1613.

Very truly yours,

H2M architects + engineers

Meaghan E. Baldwin

Meaghan E. Baldwin
Project Scientist

Enclosures: (4)

cc: Supervisor Alexander J. Gromack (all enclosures)
Town Board (all enclosures except Pace Analytical Services, Inc. data packages)
K. Luke Kalarickal, P.E., P.L.S. (all enclosures except Pace Analytical Services, Inc. data packages)
Fay S. Navratil (all enclosures except Pace Analytical Services, Inc. data packages)
Dave Pollock (all enclosures except Pace Analytical Services, Inc. data packages)

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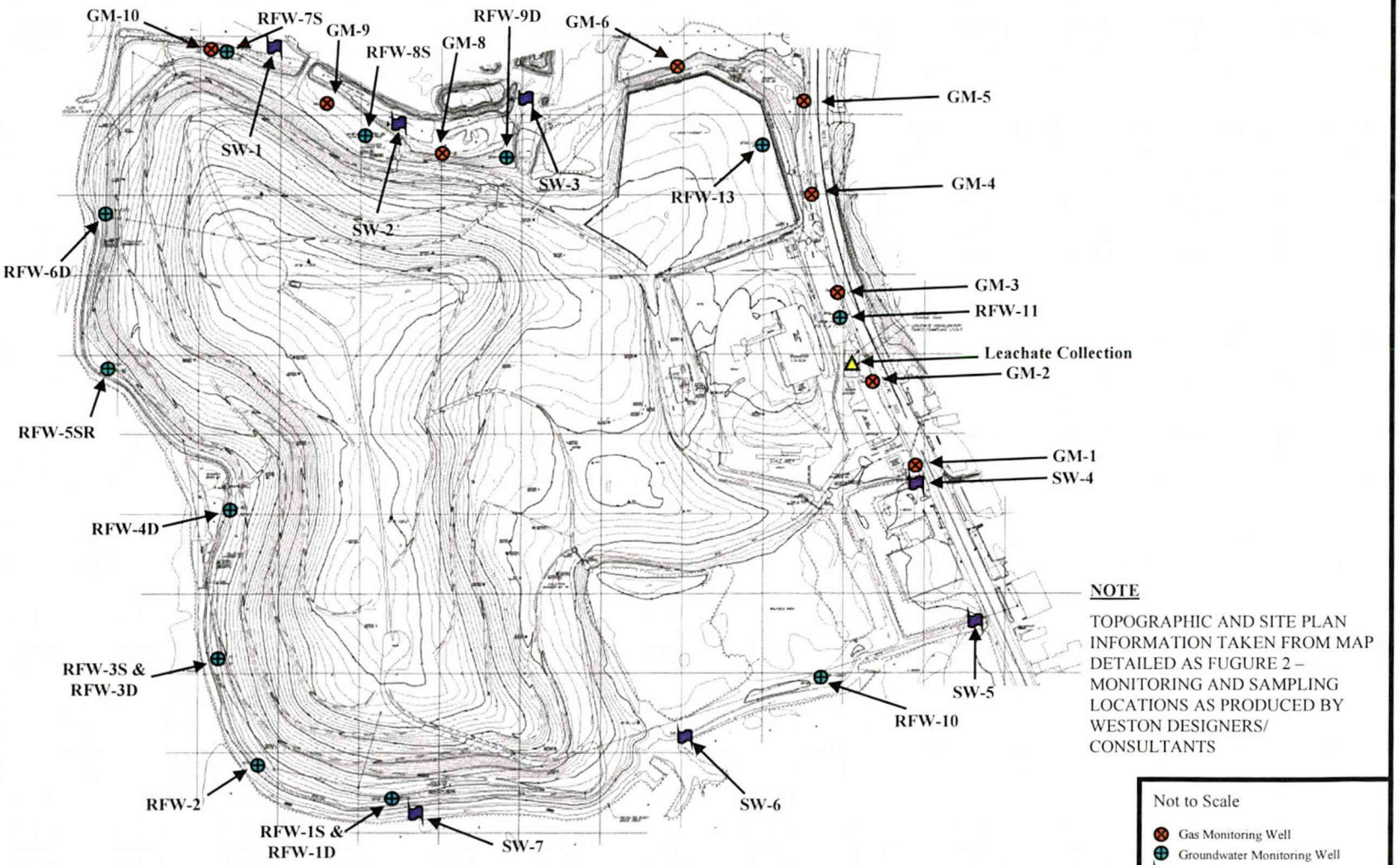

Figure 1. Monitoring Well & Sampling Locations

Clarkstown Landfill

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TABLE 1
TOWN OF CLARKSTOWN LANDFILL
LANDFILL MONITORING PROGRAM
GAS MONITORING RESULTS
September 17, 2015

Parameter	Unit	GM-1	GM-2	GM-3	GM-4	GM-5	GM-6	GM-8	GM-9	GM-10
Oxygen	% volume in air	20.2	14.1	12.5	18.0	19.8	20.3	19.4	2.9	19.8
Carbon Monoxide	ppm	6	6	5	0	7	3	4	11	3
Lower Explosive Limit of Methane (LEL)	%	0	2% of LEL* (0.2% volume in air)	2% of LEL (0.1% volume in air)	3% of LEL (0.2% volume in air)	2% of LEL (0.1% volume in air)	3% of LEL (0.2% volume in air)	4% of LEL (0.2% volume in air)	18% of LEL (0.9% volume in air)	1% of LEL (0.1% volume in air)
Hydrogen Sulfide	ppm	0	0	0	1	0	0	0	0	0

NOTE:
Typical atmospheric levels of oxygen range between 19.5% and 23.5%.
*: Value may have been higher or lower prior to collecting the reading.

TABLE 2
SAMPLING RESULTS [1]
SURFACE WATER SAMPLING PROGRAM
TOWN OF CLARKSTOWN LANDFILL
September 17, 2015

Parameter	UNIT	NYSDEC	SW-1	SW-2	SW-3	SW-4	SW-5	SW-5	SW-6	SW-7
Leachate Indicators										
Alkalinity, Total (As CaCO3)	mg/L	-	100	222 D	103	86.7	165 D	-	105	103
Biochemical Oxygen Demand	mg/L	-	3	14	6	2	36	-	6	2 U
Bromide	mg/L	2	0.50 U	**3.75**	0.50 U	0.50 U	0.50 U	-	0.50 U	0.50 U
Chemical Oxygen Demand	mg/L	-	17.3	72.6	45.8	22.9	94.7	-	10.8	10.0 U
Chloride	mg/L	250	**317 D**	174 D	229 D	87.6 D	179 D	-	138 D	146 D
Chromium, Hexavalent	µg/L	50	NA	NA	NA	NA	NA	-	NA	NA
Color	units	15	NA	NA	NA	NA	NA	-	NA	NA
Cyanide	µg/L	200	NA	NA	NA	NA	NA	-	NA	NA
Hardness (As CaCO3)	mg/L	-	200 D	300 D	280 D	120 D	380 D	-	210 D	200 D
Mercury	µg/L	0.7	NA	NA	NA	NA	NA	-	NA	NA
Nitrate as N	mg/L	10	0.35	0.10 U	0.32	0.10 U	0.10 U	-	0.61	0.56
Nitrite as N	mg/L	1	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	-	0.10 U	0.10 U
Nitrate + Nitrite	mg/L	10	0.45	0.20	0.42	0.20	0.20	-	0.71	0.66
Nitrogen, Ammonia (As N)	mg/L	2	0.11	0.28	0.10 U	0.46	1.43	-	0.16	0.14
Nitrogen, Kjeldahl, Total	mg/L	-	0.44	4.29 D	0.40	0.41	3.68	-	0.22	0.34
Phenolics, Total Recoverable	µg/L	1	5.0 U	**7.6**	5.0 U	5.0 U	**6.0**	-	5.0 U	5.0 U
Sulfate	mg/L	250	10.8	131 D	11.1	7.94	21.4	-	22.4	25.5
Total Dissolved Solids	mg/L	500	**532**	**630**	**534**	234	432	-	324	381
Total Organic Carbon	mg/L	-	5.61	21.5	25.9	10.3	40.3	-	3.12	4.28
Inorganic Parameters										
			TOTAL	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**	***DISSOLVED***	**TOTAL**	**TOTAL**
Aluminum	µg/L	-	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	µg/L	3	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	µg/L	25	NA	NA	NA	NA	NA	NA	NA	NA
Barium	µg/L	1,000	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	µg/L	3	NA	NA	NA	NA	NA	NA	NA	NA
Boron	µg/L	1,000	107	493	96.7 B	87.0 B	233	183	59.6 B	57.2 B
Cadmium	µg/L	5	0.30 B	0.10 U	0.10 U	0.20 B	0.80 B	0.20 B	0.10 U	0.10 U
Calcium	µg/L	-	59,200	106,000	55,500	29,400	96,300	54,900 E	59,600	61,900
Chromium	µg/L	50	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	µg/L	-	NA	NA	NA	NA	NA	NA	NA	NA
Copper	µg/L	200	NA	NA	NA	NA	NA	NA	NA	NA
Iron	µg/L	300	**4,890 E**	**4310 E**	**602 E**	**4,780 E**	**46,200 E**	**1,040**	**960 E**	**972 E**
Lead	µg/L	25	**30.2**	24.7	3.9	18.8	**306**	4.2	3.2	5.3
Magnesium	µg/L	35,000	11,100	13,700	10,300	7,450	23,100	10,300 E	11,100	11,300
Manganese	µg/L	300	**1,110**	**993**	**303**	**604**	**1,180**	**510**	149	123
Nickel	µg/L	100	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	µg/L	-	3,380 B	23,500	3,700 B	2,660 B	7,480	4,610 B	1,790 B	1,850 B
Selenium	µg/L	10	NA	NA	NA	NA	NA	NA	NA	NA
Silver	µg/L	50	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	µg/L	20,000	**127,000**	**97,700**	**126,000**	**47,400**	**89,100**	**83,200 E**	**40,800**	**42,500**
Thallium	µg/L	0.5	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	µg/L	-	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	µg/L	2,000	NA	NA	NA	NA	NA	NA	NA	NA
Iron + Manganese	µg/L	500	**6,000**	**5,303**	**905**	**5,384**	**47,380**	**1,550**	**1,109**	**1,095**

NOTES:
D = Diluted
U = Undetected
B = The reported value is less than the Contract Required Detection Limit but greater than the Instrument Detection Limit.
E = The ICP serial dilution analysis did not meet the proper limits.
[1] Highlighted and bold values exceed NYSDEC standards or guidance values.
[2] NYSDEC Standard or guidance value as identified in Division of Water Technical and Operational Guidance Series (TOGS) (1.1.1) - Ambient Water Quality Standards, and/or in the New York State regulation 6 NYCRR Part 703.
NA = Constituent not analyzed during this sampling event.

APPENDIX A

PACE ANALYTICAL SERVICES, INC. DATA PACKAGES
SURFACE WATER SAMPLE LABORATORY RESULTS

Clarkstown Town Landfill – 344001 – This site, adjacent to the Hackensack River, is a closed municipal landfill. The landfill is located approximately 1000 feet south of Route 59, and is bounded on the east by NYS Route 303.

Regulated wetlands are located to the west and south of the landfill (NYSDEC wetland NA-4). A small stream runs north of the landfill, and the Hackensack River is located approximately 500 feet west of the site. The site is currently zoned as industrial. A composting facility, waste transfer station, and scale house operate at the site. The Town has constructed a model aircraft runway on top of the landfill for use by the members of the Rockland County Radio Control Club. A PV array is also located on the landfill surface.

Waste disposal at this site began in the 1940's, before the Town owned the property. The Town purchased the land in the 1950's and operated the landfill until December 1990. Waste arrived at the site from the Towns of Greenburgh, Orangetown, and Ramapo.

Current Status - Large portion of the landfill is complete and under O&M for leachate sampling, vector monitoring and landfill gas monitoring. O&M reports submitted by Town's consultant H2M. Solar panel system has been installed and will be monitored in quarterly O&M reports. Transfer station, recycling center is run by RCSWMA and Region 3 has the lead.

Riverso portion of the landfill is still being funded by an old Title 3 EQBA CA with the Town. Roughly 1.2 million left on the grant to cap the 1.2 acre off-site Riverso portion. No cost time extension for the CA expires 12/31/16. No money has been spent since 2012. Riverso refuses to give the Town access. The Town has been trying to condemn the property and succeeded with the condemnation proceedings. The Town has not moved forward with offering Riverso a settlement value on the parcel, because of a recent judgement in settlement award of the same nature.

The project is currently stuck in design. H2M has proposed a design that would define the limits of the waste and prepare engineers estimates for the work. No design WP has been received.

Orange & Rockland Utilities – 344014 – The site is located in a commercial/residential area that is bordered on the north and east by the Hackensack River, railroad tracks to the west, and Route 59 to the south. The Village of Nyack draws its water supply from the river at a point directly across from the site.

The site is currently used as a satellite station for the Orange and Rockland's line crew, garaging of vehicles, and office space. In the past, the site was used for storage and repair of transformers. The entire site is paved with asphalt. There are several transmission towers and an Orange and Rockland Utilities operating building on-site.

From the late 1920s to approximately 1981 the site was used to store and repair electrical transformers, capacitors and other utility equipment. Two underground storage tanks located in the center of the site were used to store gasoline for fueling service trucks.