D&B ENGINEERS AND ARCHITECTS

330 Crossways Park Drive, Woodbury, New York 11797
516-364-9890 • 718-460-3634 • Fax: 516-364-9045 • www.db-eng.com

Principals

Steven A. Fangmann, P.E., BCEE, *President & Chairman*
William D. Merklin, P.E., *Executive Vice President*
Robert L. Raab, P.E., BCEE, CCM, *Senior Vice President*
Joseph H. Marturano, *Senior Vice President*

February 6, 2024

John Spellman, Project Manager
Division of Environmental Remediation
NYS Department of Environmental Conservation, Region 03
625 Broadway
Albany, NY 12233-7014

Re: Town of Clarkstown Landfill
Annual Groundwater/Surface Water/Quarterly Landfill Gas Monitoring Program
Fourth Quarter 2023
D&B No. 3792

Dear Mr. Spellman:

As the engineering consultant for the Town of Clarkstown, this correspondence serves as the annual report for the groundwater sampling program, surface water sampling program and quarterly report for the landfill gas monitoring program conducted during the fourth quarter of 2023 for the Town of Clarkstown landfill located on Route 303 in West Nyack, NY.

The monitoring program was conducted between October 17 and October 19, 2023 and included landfill gas and vector monitoring, settlement plates/railroad spikes surveying and groundwater and surface water sampling. Samples were analyzed by Pace Analytical (Pace) located in Melville, NY, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. Work 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** is enclosed with this providing all sampling/monitoring locations.

Landfill Gas Monitoring

Landfill gas monitoring consisted of surveying nine of ten existing gas monitoring wells (GM-1, GM-2, GM-3, GM-4, GM-5, GM-6, GM-8, GM-9 and GM-10). Note that gas monitoring Well GM-07 was damaged and could not be monitored.

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 October 19, 2023 using a GEM 5000 Plus landfill gas meter. Weather conditions that day were partly cloudy with a temperature of about 64 degrees Fahrenheit, low winds. As summarized in Table 1, methane, hydrogen sulfide, carbon monoxide and LEL were all found to be at concentrations below the instrument detection limits, with the exception of GM-9 which had 1.4% methane or 15 % LEL. This well has historically shown trace amounts of methane.

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.

Settlement Plates and Railroad Spike Survey

The settlement plates and railroad spike points were surveyed this monitoring period by New York State Licensed Surveyors Colliers Engineering & Design CT, P.C. (formerly Maser Consulting P.A.), subcontractor to D&B Engineers and Architects (D&B). Settlement plate and railroad spike elevation measurements are provided in **Appendix A**.

Groundwater Sampling

The groundwater samples were analyzed for the baseline suite of parameters based on New York State Department of Environmental Conservation (NYSDEC) Part 360 requirements as identified in 6 NYCRR Part 360-2.11 (d)(6). The analyses included leachate indicators, inorganic parameters and organic parameters associated with the baseline requirements. The laboratory test results were compared to the NYSDEC Class GA groundwater standards 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. The volatile organic compound (VOC) parameters, inorganic parameters and leachate indicators that were detected at concentrations exceeding the NYSDEC standards are indicated in the enclosed **Tables 2-1, 2-2 and 2-3**, respectively. Additionally, the Pace analytical data reports are provided in **Appendix B**.

Groundwater samples were collected from 11 groundwater monitoring wells (i.e., RFW-1S, RFW-lD, RFW-2, RFW-3S, RFW-3D, RFW-4D, RFW-5SR, RFW-6D, RFW-7S, RFW-8S and RFW-11) between October 17 and October 19, 2023. A Field blank sample (Field Blank) was collected through new tubing via peristaltic pump.

Surface Water and Leachate Sampling

Surface Water samples were collected from 7 of the 7 locations (SW-1, SW-2, SW-3, SW-4, SW-5, SW-6 and SW-7) on October 18, 2023. The surface water samples were analyzed for the baseline 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, inorganic parameters and organic parameters associated with the baseline requirements. Consistent with historical Quarterly Monitoring Program reports, the laboratory test results were compared to the NYSDEC Class GA groundwater standards 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. The VOCs, inorganic parameters and leachate indicators that were detected at concentrations exceeding the NYSDEC standards are indicated in the enclosed **Tables 3-1, 3-2 and 3-3**, respectively. Additionally, the Pace analytical data package is attached as **Appendix C**.

In addition, a sample was collected from the leachate storage tank discharge piping on October 18, 2023. The sample was 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, inorganic parameters and organic parameter. The laboratory test results were compared to the NYSDEC Class GA groundwater standards 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. The VOCs, inorganic parameters and leachate indicators that were detected in the one leachate sample exceeding the NYSDEC standards are indicated in the enclosed Tables 3-1, 3-2 and 3-3, respectively. Additionally, the Pace analytical data package is attached as Appendix C.

If you should have any questions, please contact me at (516) 364-9890, Ext. 3068.

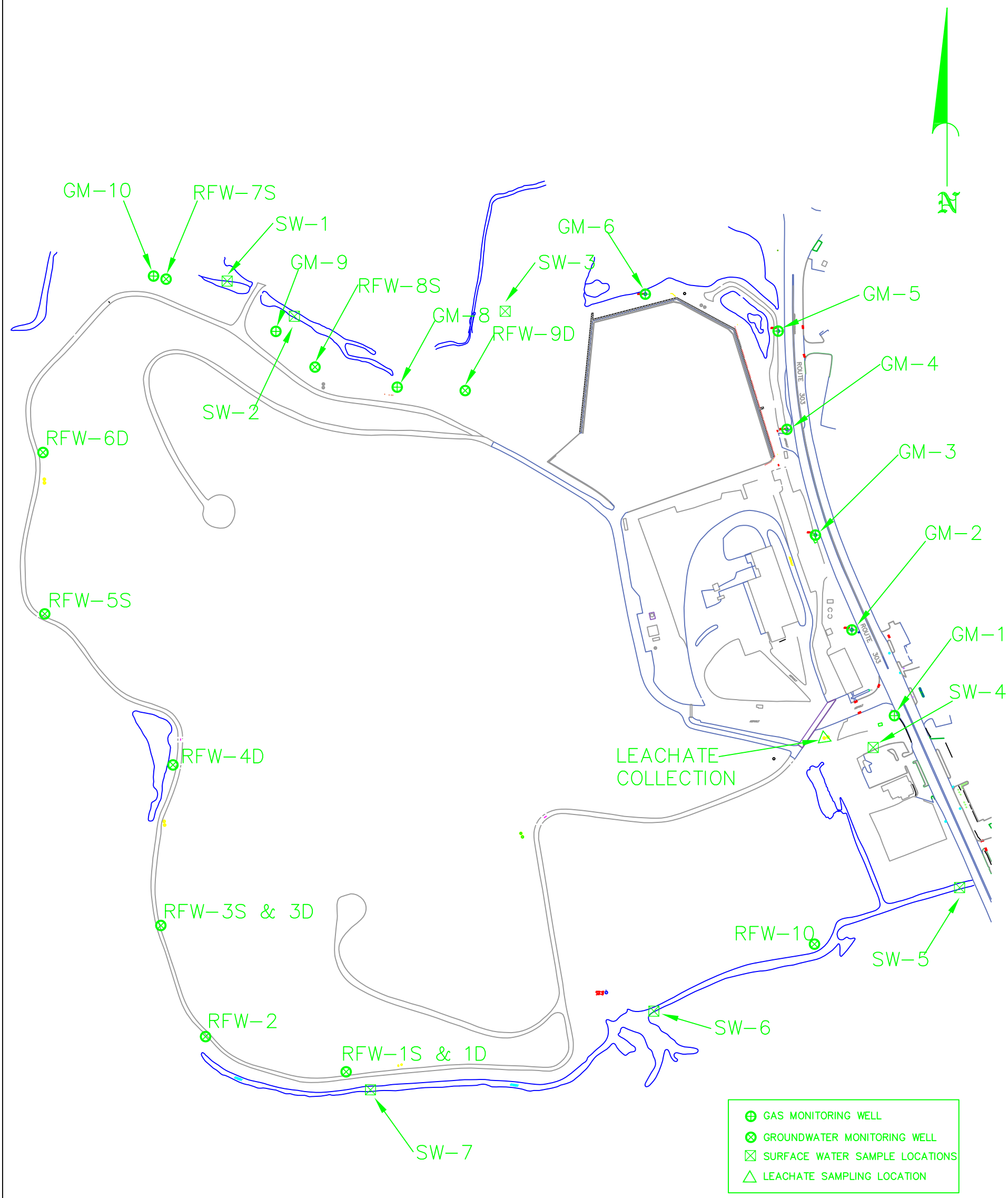
Very truly yours,

Thomas P. Fox, P.G.
Senior Associate

TPFt/cf
Enclosures
cc: C. Wagner (Clarkstown)
F. DeVita (D&B)
♦3792\TPF121523JS_Ltr(R01)

FIGURE 1

SAMPLE LOCATION MAP



MAP SOURCE: TOWN OF CLARKSTOWN

D&B ENGINEERS AND ARCHITECTS, P.C.

CLARKSTOWN LANDFILL
ENVIRONMENTAL MONITORING

SAMPLE LOCATION MAP

NOT TO SCALE

FIGURE 1

F:\3792\3792 - MW Loc Map92016.dwg, 9/22/2016 3:28:39 PM, Adobe PDF

TABLES

Table 1
Town of Clarkstown Landfill
Landfill Monitoring Program
Landfill Gas Monitoring Results, Fourth Quarter 2023

Monitoring Date: October 19th, 2023

Parameter	Unit	Landfill Gas Monitoring Well									
		GM-1	GM-2	GM-3	GM-4	GM-5	GM-6	GM-7	GM-8	GM-9	GM-10
Methane	**%**	0	0	0	0	0	0	N/A	0	1.4	0
Lower Explosive Limit	**%**	0	0	0	0	0	0	N/A	0	15.0	0
Oxygen	**%**	19.1	17.1	17	19.6	19.2	18.8	N/A	19	14.5	17.9
Hydrogen Sulfide	**ppm**	0	0	0	0	0	0	N/A	0	0	0
Carbon Monoxide (CO)	**ppm**	1	1	0	0	0	0	N/A	0	1	1

Notes: GM-7 had no cap for sampling. Could not attach GEM5000 Plus Gas Analyzer
ppm= Part Per Million
%= Percent

D&B ENGINEERS AND ARCHITECTS

Table 2-1
Town of Clarkstown Landfill
Annual Groundwater Monitoring Program
Monitoring Well Sample Results
Volatile Organic Compounds

Units in ug/l	Sample ID / Sample_date	RFW-1S 10/18/23	RFW-1D 10/18/23	RFW-2 10/18/23	RFW-3S 10/17/23	RFW-3D 10/18/23	RFW-4D 10/18/23
COMPOUNDS	NYSDEC CLASS GA GROUNDWATER ST/GV						
1,1,1,2-Tetrachloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	0.04 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	0.04 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	3 ST++	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	3 ST++	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (MEK)	50 GV	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50 GV	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50 GV	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acrylonitrile	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	60 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	7 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cis-1,2-Dichloroethylene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cis-1,3-Dichloropropene	0.4 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Iodomethane (Methyl Iodide)	5 ST	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
m,p-Xylenes	5 ST+	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methylene Chloride	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	5 ST+	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene(PCE)	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trans-1,2-Dichloroethene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trans-1,3-Dichloropropene	0.4 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trans-1,4-Dichloro-2-Butene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene (TCE)	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Acetate	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	2 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Volatile Organic Compounds	---	0	0	0	0	0	0

+	Applies to each isomer individually
++	Applies to sum of isomer
U	Compound was analyzed for but not detected
J	Estimated value

Exceeds Class GA Standard

ug/l	Micrograms per liter
GV	Guidance Value
ST	Standard
--	No ST or GV or analyzed

D&B ENGINEERS AND ARCHITECTS

Table 2-1
Town of Clarkstown Landfill
Annual Groundwater Monitoring Program
Monitoring Well Sample Results
Volatile Organic Compounds

Units in ug/l	Sample ID / Sample_date	RFW-5S 10/17/23	RFW-6D 10/17/23	RFW-7S 10/17/23	RFW-8S 10/17/23	RFW-9D 10/18/23
COMPOUNDS	NYSDEC CLASS GA GROUNDWATER ST/GV					
1,1,1,2-Tetrachloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	5 ST	1.1	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	0.04 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	0.04 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	3 ST++	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	3 ST++	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (MEK)	50 GV	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50 GV	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50 GV	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acrylonitrile	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	60 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	7 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cis-1,2-Dichloroethylene	5 ST	21.5	1.0 U	1.0 U	1.0 U	1.0 U
Cis-1,3-Dichloropropene	0.4 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Iodomethane (Methyl Iodide)	5 ST	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
m,p-Xylenes	5 ST+	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methylene Chloride	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	5 ST+	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene(PCE)	5 ST	4.3	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trans-1,2-Dichloroethene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trans-1,3-Dichloropropene	0.4 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trans-1,4-Dichloro-2-Butene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene (TCE)	5 ST	1800	1.0 U	1.0 U	1.0 U	1.0
Trichlorofluoromethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Acetate	---	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	2 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Volatile Organic Compounds	---	1826.9	0	0	0	1

\+ Applies to each isomer individually
++ Applies to sum of isomer
U Compound was analyzed for but not detected
J Estimated value

Exceeds Class GA Standard
ug/l Micrograms per liter
GV Guidance Value
ST Standard
-- No ST or GV or analyzed

D&B ENGINEERS AND ARCHITECTS

Table 2-2
Town of Clarkstown Landfill
Annual Groundwater Monitoring Program
Monitoring Well Sample Results
Inorganic Parameters

Units in ug/l	Sample ID / Sample_date	RFW-1S 10/18/23	RFW-1D 10/18/23	RFW-2 10/18/23	RFW-3S 10/17/23	RFW-3D 10/18/23	RFW-4D 10/18/23	RFW-5S 10/17/23	RFW-6D 10/17/23	RFW-7S 10/17/23	RFW-8S 10/17/23	RFW-9D 10/18/23
METALS	NYSDEC CLASS GA GROUNDWATER ST/GV											
Aluminum	--	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	163 J	31.9 J	287
Antimony	3 ST	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U
Arsenic	25 ST	10.0 U	10.0 U	6.4 J	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Barium	1000 ST	154 J	214	546	226	104 J	284	524	387	30.5 J	1410	589
Beryllium	3 GV	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Boron	1000 ST	55.7	29.8 J	26.7 J	8.5 J	6.7 J	28.5 J	20.8 J	120	89.1	112	241
Cadmium	5 ST	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Calcium	--	167000	78700	82700	30300	24800	83500	91000	35400	22500	129000	138000
Chromium, Hexavalent	50 ST	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Chromium, Total	50 ST	10.0 U	2.0 J	7.5 J	1.9 J	3.0 J	3.3 J	10.0 U	10.0 U	10.0 U	1.3 J	10.1
Cobalt	--	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Copper	200 ST	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Cyanide	200 ST	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Iron	300 ST	100 U	63.1 J	44.0 J	100 U	38.5 J	48.8 J	100 U	24.0 J	100 U	35000	889
Lead	25 ST	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	38.4	5.0 U	5.0 U	5.0 U	2.4 J	5.0 U
Magnesium	35000 GV	20700	8450	12000	3710	3000	10500	8210	12000	1230	22800	30500
Manganese	300 ST	78.3	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	36.5	44.9	10.0 U	3260	451
Mercury	0.7 ST	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	100 ST	23.1 J	16.7 J	47.7	12.7 J	11.9 J	56.8	20.0 J	15.7 J	21.3 J	55.7	39.0 J
Potassium	--	2250 J	2200 J	1740 J	1230 J	1100 J	2620 J	1730 J	2090 J	8250	4860 J	10400
Selenium	10 ST	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Silver	50 ST	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Sodium	20000 ST	34100	17300	17500	5040	4180 J	15900	8380	11000	15500	20300	214000
Thallium	0.5 GV	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Vanadium	--	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Zinc	2000 GV	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U

ug/l	Micrograms per liter
U	Compound was analyzed for but not detected
J	Estimated value
--	No ST or GV
GV	Guidance Value
ST	Standard

Exceeds Class GA Standard/Guidance value

D&B ENGINEERS AND ARCHITECTS

Table 2-3
Town of Clarkstown Landfill
Annual Groundwater Monitoring Program
Monitoring Well Sample Results
Leachate Indicators

Units in mg/l Sample ID Sample_date		RFW-1S 10/18/23	RFW-1D 10/18/23	RFW-2 10/18/23	RFW-3S 10/17/23	RFW-3D 10/18/23	RFW-4D 10/18/23	RFW-5S 10/17/23	RFW-6D 10/17/23	RFW-7S 10/17/23	RFW-8S 10/17/23	RFW-9D 10/18/23
Chemical Name	NYSDEC CLASS GA GROUNDWATER ST/GV											
Alkalinity, Total (as CaCO3)	---	294	119	141	62.3	55.0	156	168	127	64.3	775	307
Biochemical Oxygen Demand (BOD)	---	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10.8	2.0 U	2.0 U
Bromide	2 GV	0.66	0.051 J	0.068 J	0.50 U	0.50 U	0.10 J	0.073 J	0.16 J	0.18 J	0.10 J	0.088 J
Chloride (as Cl)	250 ST	181	111	105	6.6	3.0	78.2	62.2	21.4	7.5	5.2	494
Cod - Chemical Oxygen Demand	---	18.3	9.7 J	11.8	9.7 J	5.4 J	5.4 J	9.7 J	7.5 J	7.5 J	152	24.8
Color	15 ST	3.0 J	3.0 J	5.0 U	5.0 U	3.0 J	4.0 J	3.0 J	5.0 U	5.0 U	700	7.0
Hardness (as CaCO3)	---	502	231	256	90.9	74.3	252	261	138	61.2	416	470
Nitrogen, Ammonia (as N)	2 ST	0.12	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.81	4.6	92.3	0.29
Nitrogen, Kjeldahl, Total	---	0.12	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11	0.92	4.4	101	0.50 U
Nitrogen, Nitrate (as N)	10 ST	0.62	1.8	1.6	2.3	2.4	1.6	1.2	0.050 U	0.050 U	0.050 U	0.052
Phenolics, Total Recoverable	0.001 ST	0.01 U	0.016	0.01 U	0.0153	0.01 U	0.01 U	0.0092 J	0.0191	0.0193	0.0295	0.01 U
Sulfate (as SO4)	250 ST	32.9	20.0	18.0	22.7	22.9	23.5	21.7	9.3	9.3	5.0 U	5.6
Total Dissolved Solids	500 ST	744	375	404	142	129	370	330	176	76.0	508	1260
Total Organic Carbon	---	1.3	0.52 J	0.48 J	7.4	1.0 U	0.38 J	0.86 J	0.53 J	0.64 J	59.8	5.3

mg/l	Milligrams per liter
U	Compound was analyzed for but not detected
J	Estimated detection limit or value
--	No ST or GV or not analyzed
GV	Guidance Value
ST	Standard

Exceeds Class GA Standard

Table 3-1
Town of Clarkstown Landfill
Surface water and Leachate Sample Results
Volatile Organic Compounds

Units in ug/l	Sample ID Sample_date	SW-1 10/18/23	SW-3 10/18/23	SW-4 10/18/23	SW-5 10/18/23	SW-6 10/18/23	SW-7 10/18/23	LEACHATE 10/18/23
COMPOUNDS	NYSDEC CLASS GA GROUNDWATER ST/GV							
1,1,1,2-Tetrachloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	0.04 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	0.04 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	0.0006 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	3 ST++	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	3 ST++	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (MEK)	50 GV	5.0 U	5.0 U	3.3 J	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	--	5.0 U	5.0 U	5.4	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50 GV	5.4	5.1	39.0	12.6	5.0 U	5.0 U	5.0 U
Acrylonitrile	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	60 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	7 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cis-1,2-Dichloroethylene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cis-1,3-Dichloropropene	0.4 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50 GV	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Iodomethane (Methyl Iodide)	5 ST	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Methylene Chloride	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene(PCE)	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	5 ST	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Trans-1,2-Dichloroethene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trans-1,3-Dichloropropene	0.4 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trans-1,4-Dichloro-2-Butene	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene (TCE)	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	5 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Acetate	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	2 ST	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Volatile Organic Compounds	--	5.4	5.1	47.7	16.8	0	0	0

ug/l Micrograms per liter
++ Applies to sum of isomer
GV Guidance Value
ST Standard

U Compound was analyzed for but not detected
J Estimated value
-- No ST or GV or analyzed
Exceeds Class GA Standard/Guidance value

D&B ENGINEERS AND ARCHITECTS

Table 3-2
Town of Clarkstown Landfill
Surfacewater and Leachate Sample Results
Inorganic Parameters

Units in ug/l	Sample ID Sample_date	SW-1 10/18/23	SW-3 10/18/23	SW-4 10/18/23	SW-5 10/18/23	SW-6 10/18/23	SW-7 10/18/23	LEACHATE 10/18/23
METALS	NYSDEC CLASS GA GROUNDWATER ST/GV							
Aluminum	--	225	46.0 J	876	408	100 J	68.3 J	212
Antimony	3 ST	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U	60.0 U
Arsenic	25 ST	10.0 U	7.5 J	5.8 J	10.0 U	10.0 U	10.0 U	10.0 U
Barium	1000 ST	77.3 J	96.7 J	56.5 J	133 J	121 J	113 J	307
Beryllium	3 GV	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Boron	1000 ST	143	186	78.8	544	182	76.0	1030
Cadmium	5 ST	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Calcium	--	42700	127000	91700	113000	117000	47500	150000
Chromium, Hexavalent	50 ST	12 J	20 U	20 U	18 J	20 U	20 U	20 U
Chromium, Total	50 ST	10.0 U	1.3 J	3.4 J	2.9 J	10.0 U	10.0 U	10.0 U
Cobalt	--	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Copper	200 ST	25.0 U	25.0 U	7.2 J	25.0 U	25.0 U	25.0 U	25.0 U
Cyanide	200 ST	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Iron	300 ST	2140	9170	4410	6510	1570	2500	5840
Lead	25 ST	5.0 U	5.0 U	10.3	8.4	5.0 U	5.0 U	5.0 U
Magnesium	35000 GV	8230	10700	5610	14700	13500	9430	26700
Manganese	300 ST	551	5810	708	2400	1610	619	944
Mercury	0.7 ST	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	100 ST	11.6 J	16.2 J	13.2 J	31.0 J	16.1 J	16.5 J	23.5 J
Potassium	--	5070	4680 J	9200	8760	7980	2520 J	25800
Selenium	10 ST	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Silver	50 ST	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Sodium	20000 ST	77700	36600	21900	76700	14800	44700	116000
Thallium	0.5 GV	10.0 U	8.5 J	10.0 U	5.6 J	10.0 U	10.0 U	10.0 U
Vanadium	--	50.0 U	50.0 U	5.3 J	4.9 J	50.0 U	50.0 U	50.0 U
Zinc	2000 GV	20.0 U	20.0 U	82.4	41.4	20.0 U	20.0 U	75.1

ug/l	Micrograms per liter
U	Compound was analyzed for but not detected
J	Estimated value
--	No ST or GV
GV	Guidance Value
ST	Standard
Exceeds Class GA Standard/Guidance value	

D&B ENGINEERS AND ARCHITECTS

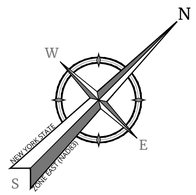
Table 3-3
Town of Clarkstown Landfill
Surfacewater and Leachate Sample Results
Leachate Indicators

Units in mg/l Chemical Name	Sample ID Sample_date NYSDEC CLASS GA GROUNDWATER ST/GV	SW-1 10/18/23	SW-3 10/18/23	SW-4 10/18/23	SW-5 10/18/23	SW-6 10/18/23	SW-7 10/18/23	LEACHATE 10/18/23
Alkalinity, Total (as CaCO3)	--	156	443	154	467	425	147	653
Biochemical Oxygen Demand (BOD)	--	5.5	2.7	40.0 U	2.7	11.9	2.0 U	2.7
Bromide	2 GV	0.057 J	0.028 J	0.63	0.033 J	0.025 J	0.061 J	0.18 J
Chloride (as Cl)	250 ST	145	41.0	58.8	65.6	13.9	85.2	150
Cod - Chemical Oxygen Demand	--	46.4	44.2	178	131	70.1	26.9	63.6
Color	15 ST	80.0	70.0	35.0	200	160	36.0	140
Hardness (as CaCO3)	--	141	361	252	343	348	157	485
Nitrogen, Ammonia (as N)	2 ST	0.19	1.7	1.1	0.48	0.46	0.32	15.2
Nitrogen, Kjeldahl, Total	--	1.5	2.2	5.6	4.4	2.2	0.73	13.3
Nitrogen, Nitrate (as N)	10 ST	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.14	0.050 U
Phenolics, Total Recoverable	0.001 ST	0.01 U	0.158	0.193	0.0195	0.01 U	0.0061 J	0.0087 J
Sulfate (as SO4)	250 ST	8.9	2.9 J	81.5	19.1	2.0 J	9.7	1.6 J
Total Dissolved Solids	500 ST	414	510	416	632	454	344	896
Total Organic Carbon	--	11.6	33.9 J	35.3	28.7	18.4	6.3	23.2

mg/l	Milligrams per liter
U	Compound was analyzed for but not detected
J	Estimated value
--	No ST or GV or not analyzed
GV	Guidance Value
ST	Standard
Exceeds Class GA Standard	

APPENDIX A

SETTLEMENT PLATE AND RAILROAD SPIKE ELEVATION MEASUREMENTS



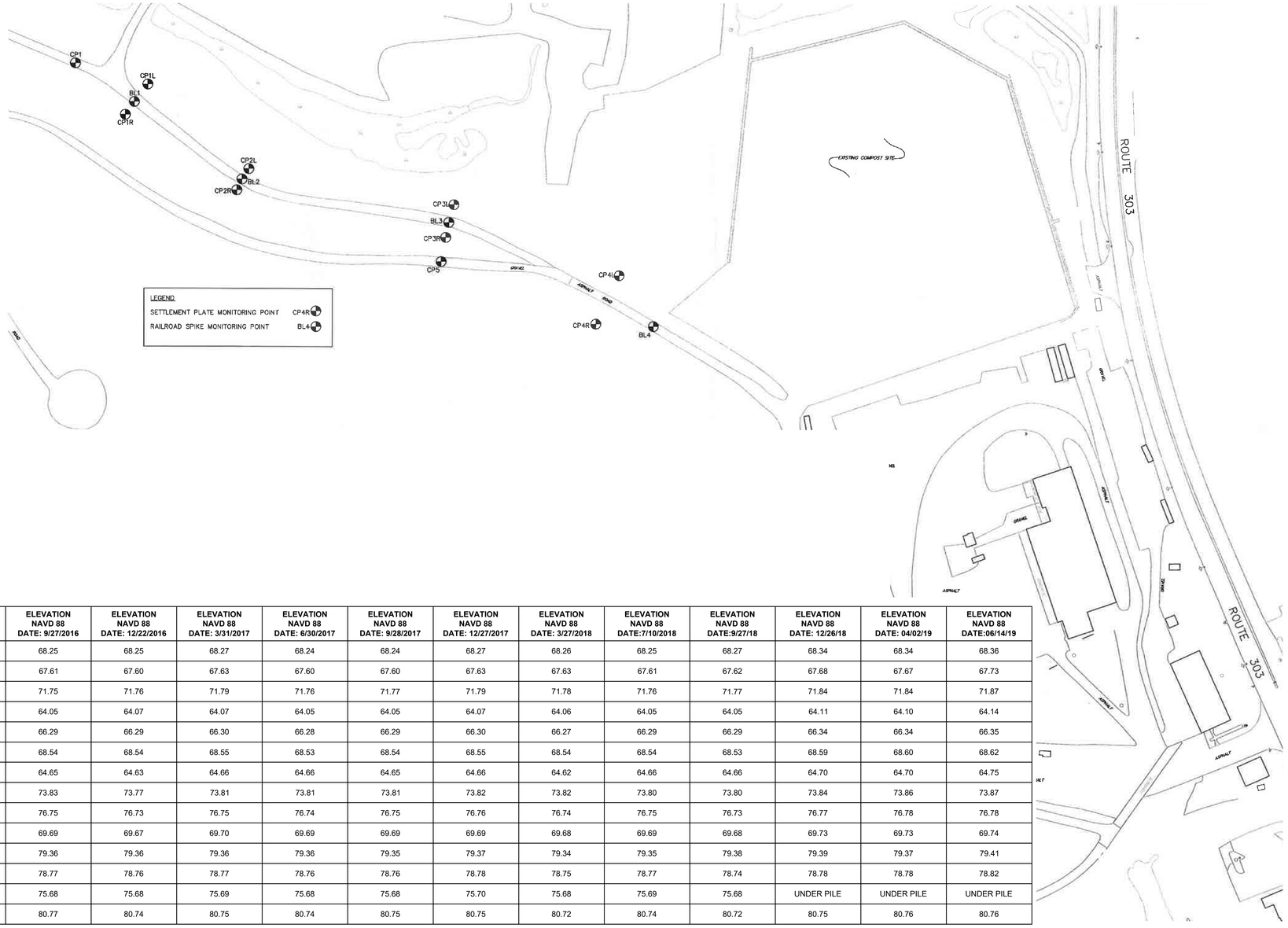


PLATE ID	DESCRIPTION	NORTHING NAD83 N.Y.S. PLANE	EASTING NAD 83 N.Y.S. PLANE	ELEVATION NAVD 88 DATE: 6/28/2016	ELEVATION NAVD 88 DATE: 9/27/2016	ELEVATION NAVD 88 DATE: 12/22/2016	ELEVATION NAVD 88 DATE: 3/31/2017	ELEVATION NAVD 88 DATE: 6/30/2017	ELEVATION NAVD 88 DATE: 9/28/2017	ELEVATION NAVD 88 DATE: 12/27/2017	ELEVATION NAVD 88 DATE: 3/27/2018	ELEVATION NAVD 88 DATE:7/10/2018	ELEVATION NAVD 88 DATE:9/27/18	ELEVATION NAVD 88 DATE: 12/26/18	ELEVATION NAVD 88 DATE: 04/02/19	ELEVATION NAVD 88 DATE:06/14/19
CP1	SETTLEMENT PLATE	822987.740	641890.083	68.23	68.25	68.25	68.27	68.24	68.24	68.27	68.26	68.25	68.27	68.34	68.34	68.36
BL1	SETTLEMENT PLATE	822924.730	641986.272	67.59	67.61	67.60	67.63	67.60	67.60	67.63	67.63	67.61	67.62	67.68	67.67	67.73
CP1R	SETTLEMENT PLATE	822903.818	641971.437	71.74	71.75	71.76	71.79	71.76	71.77	71.79	71.78	71.76	71.77	71.84	71.84	71.87
CP1L	SETTLEMENT PLATE	822953.628	642008.432	64.06	64.05	64.07	64.07	64.05	64.05	64.07	64.06	64.05	64.05	64.11	64.10	64.14
BL2	SETTLEMENT PLATE	822798.238	642162.130	66.29	66.29	66.29	66.30	66.28	66.29	66.30	66.27	66.29	66.29	66.34	66.34	66.35
CP2R	SETTLEMENT PLATE	822780.231	642153.812	68.50	68.54	68.54	68.55	68.53	68.54	68.55	68.54	68.54	68.53	68.59	68.60	68.62
CP2L	SETTLEMENT PLATE	822815.219	642173.389	64.66	64.65	64.63	64.66	64.66	64.65	64.66	64.62	64.66	64.66	64.70	64.70	64.75
BL3	SETTLEMENT PLATE	822728.485	642499.898	73.83	73.83	73.77	73.81	73.81	73.81	73.82	73.82	73.80	73.80	73.84	73.86	73.87
CP3R	SETTLEMENT PLATE	822703.752	642495.122	76.76	76.75	76.73	76.75	76.74	76.75	76.76	76.74	76.75	76.73	76.77	76.78	76.78
CP3L	SETTLEMENT PLATE	822757.886	642508.162	69.69	69.69	69.67	69.70	69.69	69.69	69.69	69.68	69.69	69.68	69.73	69.73	69.74
BL4	RAILROAD SPIKE	822558.793	642836.194	79.38	79.36	79.36	79.36	79.36	79.35	79.37	79.34	79.35	79.38	79.39	79.37	79.41
CP4R	SETTLEMENT PLATE	822562.268	642742.109	78.78	78.77	78.76	78.77	78.76	78.76	78.78	78.75	78.77	78.74	78.78	78.78	78.82
CP4L	SETTLEMENT PLATE	822642.269	642779.743	75.69	75.68	75.68	75.69	75.68	75.68	75.70	75.68	75.69	75.68	UNDER PILE	UNDER PILE	UNDER PILE
CP5	SETTLEMENT PLATE	822663.800	642487.720	80.77	80.77	80.74	80.75	80.74	80.75	80.75	80.72	80.74	80.72	80.75	80.76	80.76

PLATE ID	ELEVATION NAVD 88 DATE:10/08/19	ELEVATION NAVD 88 DATE:01/02/2020	ELEVATION NAVD 88 DATE:04/09/2020	ELEVATION NAVD 88 DATE:07/09/2020	ELEVATION NAVD 88 DATE:10/29/2020	ELEVATION NAVD 88 DATE:1/27/2021	ELEVATION NAVD 88 DATE:3/26/2021	ELEVATION NAVD 88 DATE:7/27/2021	ELEVATION NAVD 88 DATE:9/30/2021	ELEVATION NAVD 88 DATE:4/07/22	ELEVATION NAVD 88 DATE:6/23/22	ELEVATION NAVD 88 DATE:10/05/22	ELEVATION NAVD 88 DATE:03/31/23	ELEVATION NAVD 88 DATE:06/12/23	ELEVATION NAVD 88 DATE:09/26/23	ELEVATION NAVD 88 DATE:01/18/24			AS-BUILT ELEVATIONS (PROVIDED BY OTHERS) RECORDED 7/10/2000
CP1	68.36	68.44	68.37	68.36	68.39	68.39	68.37	68.38	68.36	68.39	68.37	68.38	68.37	68.37	68.40	68.41			70.57
BL1	67.72	67.76	67.70	67.80	67.72	67.72	67.71	67.77	67.70	67.71	67.71	67.70	67.69	67.73	67.71	67.73			70.30
CP1R	71.88	71.93	71.86	71.94	71.88	71.89	71.87	71.89	71.87	71.89	71.86	71.87	71.87	71.89	71.89	71.89			74.29
CP1L	64.14	64.18	64.11	64.21	64.12	64.13	64.11	64.12	64.10	64.11	64.12	64.10	64.09	64.09	64.12	64.12			67.22
BL2	66.37	66.39	66.34	66.41	66.36	66.36	66.34	66.38	66.33	66.34	66.33	66.33	66.30	66.45	66.38	66.35			69.54
CP2R	68.62	68.65	68.60	68.67	68.63	68.62	68.62	68.59	68.58	68.58	68.61	68.58	68.57	68.57	68.62	68.60			71.72
CP2L	64.72	64.76	64.71	64.76	64.73	64.73	64.72	64.69	64.70	64.70	64.69	64.67	64.69	64.68	64.71	64.72			67.85
BL3	73.86	73.87	73.85	73.89	73.89	73.85	73.89	73.85	73.82	73.83	73.85	73.91	73.64	73.83	73.85	73.84			76.52
CP3R	76.80	76.81	76.78	76.82	76.82	76.80	76.80	76.81	76.76	76.75	76.76	76.76	76.76	76.75	76.79	76.79			79.34
CP3L	69.76	69.77	69.74	69.76	69.77	69.73	69.80	69.75	69.72	69.71	69.70	69.71	69.70	69.70	69.73	DESTROYED			72.43
BL4	79.37	79.33	79.36	79.45	79.36	79.36	79.35	79.34	79.30	79.31	79.29	79.30	79.29	79.29	N/A	79.31			82.64
CP4R	78.80	78.76	78.78	78.86	78.79	78.78	78.78	78.78	78.74	78.73	78.74	78.72	78.71	78.71	78.74	78.73			82.11
CP4L	UNDER PILE	UNDER PILE	UNDER PILE	UNDER PILE	UNDER PILE	75.41	75.42	N/A	75.39	75.39	75.44	N/A	75.37	75.39	75.41	75.42			78.38
CP5	80.78	80.79	80.76	80.80	80.81	80.77	80.78	80.78	80.78	80.75	80.74	80.74	80.74	80.75	80.77	80.77			83.80

Colliers
Engineering & Design
www.colliersengineering.com

Doing Business as MASER CONSULTING

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF NEW YORK · DONALD PHILIP SCHEL · 050820 · LICENSED LAND SURVEYOR

Donald Philip Schel
NEW YORK LICENSED LAND SURVEYOR
LICENSE NUMBER: 050820
COLLIERS ENGINEERING & DESIGN CT, P.C.
N.Y. C.O.A. #: 0017608

MONITORING SURVEY

TOWN OF CLARKSTOWN LANDFILL PROJECT

TOWN OF CLARKSTOWN
ROCKLAND COUNTY
STATE OF NEW YORK

Colliers Engineering & Design
ALBANY
18 Computer Drive East, Suite 203
Albany, NY 12205
Phone: 518.459.3252
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
N.T.S.	01/22/24	NJL	DPS

PROJECT NUMBER:	DRAWING NAME:
16000516A	V-SURV_CLARKSTOWN_LANDFILL

SHEET TITLE:

SHEET NUMBER: 1 of 1

I:\Active\V-SURV_clarkstown_landfill\dwg\SETTLEMENT PLATE LOCATIONS TABLE By: JLCLARK

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

APPENDIX B

PACE GROUNDWATER ANALYTICAL
DATA PACKAGE

APPENDIX C

PACE SURFACE WATER AND LEACHATE ANALYTICAL DATA PACKAGE