From: Montroy, Brian <Brian.Montroy@hdrinc.com>
Sent: Tuesday, September 01, 2020 9:18 AM
To: Spellman, John (DEC)
Subject: RE: Clarkstown Landfill, 344001
Attachments: Operation and Maintenance Report 2019 Final.pdf

John,

I am sorry for the delay in getting you this report. Please find attached the 2019 Annual O&M Report for the Clarkstown Landfill. If you need any additional information or if you have any questions please feel free to contact me. Thank you and have a great day.

Brian

Brian Montroy, PG (NY), CPG
D 201.335.9405 M 845.642.8681

hdrinc.com/follow-us

From: Spellman, John (DEC) [mailto:john.spellman@dec.ny.gov]
Sent: Tuesday, August 18, 2020 3:38 PM
To: Montroy, Brian <Brian.Montroy@hdrinc.com>
Subject: RE: Clarkstown Landfill, 344001

Hi Brian,

Please send the report to me as an email attachment. Based on the size of previous years, it should get through.

John

John Spellman, P.E.
Project Manager, Remedial Bureau C
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233-7014
P: 518-402-9686| F: 518-402-9679 | john.spellman@dec.ny.gov

From: Deyette, Scott (DEC) <scott.deyette@dec.ny.gov>
Sent: Tuesday, August 18, 2020 6:56 AM

To: Montroy, Brian <Brian.Montroy@hdrinc.com>
Cc: Spellman, John (DEC) <john.spellman@dec.ny.gov>
Subject: RE: Clarkstown Landfill, 344001

Brian-

The PM for the Clarkstown Landfill is John Spellman, who is copied on this email.

R. Scott Deyette
Chief, Inspection Unit, Remedial Bureau C, Environmental Remediation

New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233-7014
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www.dec.ny.gov | | |

From: Montroy, Brian <Brian.Montroy@hdrinc.com>
Sent: Monday, August 17, 2020 3:21 PM
To: Deyette, Scott (DEC) <scott.deyette@dec.ny.gov>
Subject: Clasktown landfill

Mr. Deyette,

Hello, my name is Brian Montroy. I work for HDR Engineering. I recently (end of 2019) took over as the project manager for the O&M of gas collection and the flare station at the Clarkstown Landfill. When my college left the company I was granted access to his files. At the beginning of 2020 we completed the 2019 O&M Summary report for submission to NYSDEC. While I was going through his files I noticed that he never left the contact information for the NYSDEC Project Manager. I gave him a call and he had told me that the NYSDEC PM that he had been corresponding with had retired and he was unsure on who it was reassigned too and suggested I look into his files for the information. Long story short I could not find this information so I reached out to Region 2 (thinking project was run from there) and spoke to Lee Reiff, he gave me you name.

I wanted to confirm with you that you are indeed the Project Manager for the Clarkstown landfill, and if so, how would you like to receive the 2019 Annual O&M Report.

Thank you for your time. I look forward to hearing from you.

Brian Montroy

Brian Montroy, PG (NY), CPG
Project Manager/ Senior Geologist

Operation and Maintenance Report

Clarkstown Sanitary Landfill

Period - January-December 2019

West Nyack NY

February 10, 2020

PREPARED FOR:

TOWN OF CLARKSTOWN
DEPTPARTMENT OF ENGINEERING &
FACILITIES MANAGEMENT
10 MAPLE AVE.
NEW CITY, NY 10956

Report Verification

PROJECT: **Clarkstown Sanitary Landfill; Landfill Gas Management**
Town of Clarkstown, Department of Engineering & Facilities Management
West Nyack, New York
NYSDEC Inactive Hazardous Waste Site No. 344001

TITLE: **Operation and Maintenance Report**
Clarkstown Sanitary Landfill; January-December 2019

This document has been reviewed for accuracy and quality commensurate with the intended application.

Prepared by: Brian Montroy Date: 1/29/2020

Checked by: Colin Mills Date: 2/05/2020

Project Manager: Brian Montroy

Revised: 2/10/2020

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1 Introduction

The purpose of this annual report is to provide an operation and maintenance (O&M) summary for the period of January through December 2019 for the Clarkstown Sanitary Landfill (the Landfill), located in West Nyack, Rockland County, New York (Figure 1).

The Landfill, which is located approximately 1,000 feet south of Route 59, is bounded on the east side by New York State Route 303, and on the north, south and west sides by buffer wetlands. The Landfill property encompasses approximately 100 acres.

The Landfill had been in operation since the 1940s and ceased operations on December 31, 1990. The Landfill was closed under an Order on Consent issued by New York State Department of Environmental Conservation (NYSDEC). The Landfill is a listed inactive Hazardous Waste Class 2 site (Site No. 344001). The Operation and Maintenance Manual indicates that the United State Environmental Protection Agency (USEPA) has listed the site on the National Priority List (NPL); however, this Site does not appear to be listed on the USEPA NPL registry.

In 1996, the Town of Clarkstown (the Town) began capping the Landfill and constructing a gas collection system, which was designed to evacuate and combust methane gas from the capped Landfill. Construction of the Landfill cap and gas collection system was completed in February 1999.

The Town retained the services of Henningson, Durham & Richardson Architecture and Engineering, P.C., in association with HDR Engineering, Inc. (HDR) to assist in the O&M activities at the Landfill. HDR performed routine inspections and maintenance of the Landfill to comply with the Clarkstown Sanitary Landfill Operation & Maintenance Manual, dated October 1999.

2 Landfill Gas System Monitoring, Balancing, and Maintenance

The Landfill gas (LFG) system (Figure 2) was designed to collect, transport, and incinerate gas generated at the capped Landfill. The system is constructed of a main header pipe, horizontal surface collection areas, and 10 extraction legs with 52 extraction wells. The entire system is comprised of approximately 18,000 linear feet of high density polyethylene (HDPE) pipe of varying diameters. This section provides a description of the monitoring and maintenance of the LFG system, which includes the following:

- LFG System Collection Piping
- LFG System Surface Collector Network
- LFG Drip Leg Assemblies
- LFG System Wellheads, Vaults and Valves

Maintenance logs for the LFG system (FS-3) are included as Appendix A of this report.

2.1 LFG System Collection Piping

The header pipe (Figure 3) is constructed of a HDPE pipe that encircles the eastern and central portion of the Landfill in a circular or 'ring' shape. Four isolation (header) valves and two in-line pipe reducers are located along the length of the header pipe. The eastern and northern sections of the ring are constructed with ten-inch diameter HDPE and are reduced to an eight-inch diameter main along the southern and western sections. The gas collection piping is located above the geo-membrane and below the final cover. It is typically buried 18 to 24 inches below the existing grade of the Landfill.

The operation and maintenance of gas collection piping consists of inspection of leg vaults and valves, header vaults and valves, drip legs and well head vaults for subsidence and damage. Well head static pressures are collected using a LandTec GEM 2000 Landfill gas meter and are used to identify condensate accumulation and/or blockage.

2.2 LFG System Surface Collector Networks

The two LFG surface collectors (Figure 4) are composed of a series of perforated six-inch diameter HDPE pipes that are located at the northeast and southeast corners of the Landfill. The perforated six-inch diameter HDPE pipes have been installed in gravel-filled trenches spaced 100 feet apart. The northeast surface collection gallery is regulated by Leg Valve K. As of December 2019, the valve at Leg K is currently 5% open. The southeast collector is regulated by Leg Valve A which is currently 25% open.

The design of the southeast surface collector is unclear in part because one set of as-built drawings show the system in place and another set does not. The presence of passive vents located in the same area as the surface collector would suggest the surface collector is not in place. However, the presence of Leg Valve A suggests otherwise. If the surface

collector is in place, the prevailing thought is that the surface collector would draw ambient air via the passive collectors.

Total methane concentrations at Leg A is approximately 10-30%. The presence of the valve and the elevated methane composition suggests the surface collector is present. Therefore, HDR is managing the gas in this area under the assumption that the surface collector is in place.

2.3 LFG Drip Leg Assemblies

There are 12 drip leg assemblies (Figure 5) located at the Landfill. Some areas along the gas collection piping experience restrictions in air flow caused by the accumulation of condensate in low lying areas of the gas collecting piping. These locations are near Drip Leg (DL) 1 and DL-5 and to a lesser extent DL-10. These areas are inspected/monitored and condensate is removed during monthly site visits. It should be noted that it is common for condensate to accumulate and landfill gas lines and these issues are not unique to this landfill.

DL-1 is located in the vicinity of Leg Valve C, which services two gas extraction wells (GE-9 and GE-10). The drip leg is located immediately off the ten-inch diameter header main, which serves as a major artery for the collection piping. DL-5 is located along Leg B, between GE-2 and GE-3. Six gas extraction wells are located up-gradient of the drip leg (GE-3 through GE-8). All six of these wells are located along the northern crest of the Landfill, which is a major collection area of LFG. DL-10 is along Leg I, between GE-37 and GE-38, which services the north-west portion corner of the Landfill.

At each restricted location, the collection leg was tapped and fitted with a pipe-sleeve and tee. A PVC riser pipe and valve were connected to this sleeve/tee. The modification to the Landfill collection pipe is used exclusively to remove condensate. During each monthly site visit, each location was inspected for the presence of condensate (positive vs. negative pressure). If positive pressure or minimal negative pressure is noted, condensate is removed by utilizing a submersible or peristaltic pump which has proven to be highly effective in removing the condensate plugs in the collection pipe.

Table 2-1 illustrates the locations, dates and approximate volumes of condensate purged from the riser pipes during this reporting period. Based on the data presented below the greatest accumulation of condensate is present at DL-5.

Table 2-1: Volume of Condensate Removed From Drip Legs

Date	DL-1	DL-5	DL-10
	Volume purged (gallons)	Volume purged (gallons)	Volume purged (gallons)
January 18, 2019	0	120	0
February 16, 2019	0	0	0
March 15, 2019	0	0	0
April 19, 2019	0	0	0

May 31, 2019	0	0	0
June 11, 2019	350	100	0
July 19, 2019	0	200	0
August 20, 2019	133	42	0
September 24, 2019	15.6	43.3	0
October 24, 2019	0.5	0	45
November 19, 2019	0	0	0
December 24, 2019	25.5	81.1	0
Total Removed	**524.6**	**586.4**	**45**

2.4 System Wellheads, Vaults and Valves

The 52 LFG extraction wells (Figure 6) were inspected during monthly site visits. Gas extraction well monitoring and inspections of each well were conducted to identify potential leakage, liquid pooling, and hazardous methane conditions in the surrounding area. Deficiencies noted during the monthly inspections were reported on Form DP-1, which are included as Appendix B.

Settlement of the well head vaults is an ongoing issue at the Landfill. The Town, in conjunction with HDR has evaluated the well head construction and design, and has retrofitted LFG extraction wells and vaults at 35 locations with new QED® Accu-Flo well heads, located above grade. This new design eliminates the slip/trip/fall hazard which was associated with settlement of the old vault system. Additionally the new well heads are clearly visible and easily accessible. The new well head design also allows differential pressures to be measured. These measurements allow HDR to calculate the flow rate at the wells that have been retrofitted.

Seventeen LFG extraction wells and associated valves have not yet been retrofitted. These vaults are constructed of heavy-duty fiberglass. Over the years, some of the vaults exhibit minimal to moderate amounts of damage around the lip of the vault and/or the vault covers. This damage is cosmetic and does not affect the performance or operation of the LFG collection piping or wells.

Leg valves are monitored on a bi-annual basis (twice/year) for valve settings, gas composition and indications of differential settlement or fatigue. Originally, a ¼-inch valve and sample tube was tapped into the collection piping immediately up-gradient of each leg valve. This set-up is used to confirm suction pressure in each leg. To better evaluate the performance and to optimize gas collection at the Landfill, HDR removed the tubing and placed a compression cap over each valve. During site inspections, the cap is removed and a barbed fitting is connected to the valve. Information collected is used to evaluate LFG production and balancing of the well field. This is especially important as the LFG production continues to decrease over time.

2.5 LFG Monitoring For System Control

All of the LFG extraction wells are measured for gas composition and pressures. Each well is fitted with a valve that may be adjusted based upon corresponding gas and pressure readings. This process is referred to as “well balancing” and is performed on a monthly basis. The goal for well balancing is to optimize system operations by determining the equilibrium for each well where the methane extraction is equal to the methane production. The monthly well balancing field summary report is provided as Appendix C.

Figure 7 is a map illustrating the LFG collection system with notations for each gas extraction well that has been entirely or partially closed. The well valves that have been entirely or partially closed are primarily located around the perimeter of the Landfill, or in lower lying areas. The number of these wells has increased over time, suggesting methane production is diminishing. Gas collection, gas concentration, and volumes are discussed in Section 4.

3 Landfill Gas Handling System

This section provides a description of the monitoring and maintenance of the LFG flare control system. The system consists of three components: a LFG control system, a LFG blower assembly, and an enclosed LFG ground flare.

3.1 LFG Control System

The gas extraction rate exceeds the gas production rate at the Landfill. Currently, the flare is programmed to operate for 10 hours per day with the scheduled down time during the overnight hours. By cycling operating times, HDR is attempting to balance LFG production with extraction occurring during times when the adjacent transfer and co-joining recycling facility are active in an effort to minimize human exposure.

On occasion, the flare has failed to automatically restart in the morning.Two or three attempts were typically needed to restart the flare successfully. The failed restarts are a result of either an insufficient volume of methane available to sustain a flame or a pilot flame fail (either pilot flame blow out or an empty pilot flame fuel tank).

Despite the fact that the system is now automated, it will not attempt to restart a second time as the failed restart triggers an alarm condition (flame fail). This alarm condition requires the flare station to be reset manually. Due to these operational controls, regular (2-4 times per week) site visits by HDR are necessary to ensure that the flare operates on a regular basis.

The control system also provides safety shutdowns for emergency conditions. The safety shutdowns include:

- High Lower Explosive Limit (one for each of four combustible detectors inside the building & gas analyzer cabinet)
- Blower Overload (one for each blower)
- High Oxygen Content in LFG
- Low Methane Content in LFG
- Flame Failure
- Pilot Failure
- High Flame Temperature
- Low Flame Temperature
- Low LFG Flow
- Shutdown Valve Fail Closed
- Shutdown Valve Fail Open
- High Liquid Level in Condensate Tank

The LFG control system receives signals from the sensors and detectors to monitor the operation of the enclosed ground flare. Malfunction of sensing/detecting devices will trigger alarms and shut down the system. The alarm shutdowns are logged by the system.

As noted in previous reports, the Gas Analysis Cabinet (GAC) methane detector has not been operating properly. Two deficiencies have been identified with this unit:

- The temperature transmitter has been malfunctioning.
- The oxygen sensor has been malfunctioning.

HDR has been monitoring the gas makeup from a flare sampling port. The data show that the gas is under control and the flare itself is operating properly and within manufacturer's guidelines. This monitoring precludes the need to repair the GAC detector at this time.

The entire gas handling system was inoperable from early March to the beginning of May due to an electrical transformer issue that supplied power to the landfill gas control system. The Town of Clarkstown procured an electrician and the necessary repairs were made to the transformer and the existing supply lines. Upon completion of the repairs the system was again operational.

3.2 Blower Assembly

The blower assembly is located in a "Butler" building, which is open on the north side to facilitate adequate ventilation. The blower assembly consists of two explosion-proof, spark-proof centrifugal vacuum blowers (Blower 301 and 302). Each blower has a separate pre-filtration system (demister filters) and inlet and outlet isolation valves. The blower assembly is mounted on a steel skid, which is centrally located within the building. The blower's starter is located outside of the blower assembly at the flare station control panel. The system is currently operated using one blower (Blower 301). HDR noted a decrease in the system flow during the previous reporting period (2018). In discussions with the manufacturer of the flare system it was determined that the demisters filters were clogged/spent. New filters were purchased by the Town of Clarkstown during the 1st quarter of 2019. HDR replaced the filter in early May of 2019 upon completion of the electrical repairs discussed in section 3.1 above and the system was restarted.

After electrical repairs and demister filter replacement, the blower assembly experienced intermittent low flow conditions through the months of May, June, and July of 2019. In an effort to rectify the flow issues, HDR switched the operational blower from Blower 301 to Blower 302. This fix worked temporarily until the system shut down in mid-July due to low amp and no flow alarms. HDR investigated the issue and found that the coupler that connects the fan drive shaft to the blower motor had sheared. HDR switched back to Blower 301 and restarted the system. Repairs will be made during the 1st half of 2020 when the blowers are serviced. They system has been operational since this repair with the exception of the mechanical failure of the UV flame arrestor which is discussed in Section 3.3 below.

Four lower explosive limit (LEL) sensors are located at the corners of the skid and are checked and calibrated annually. Since the LEL sensors were replaced in March 2015 they have been operating normally and are calibrated using an MSA Ultima® calibrator.

The inlet isolation valve is used to control flow. The valve on the operating blower is positioned to provide an average flow of 550-650 cubic feet per minute (CFM). However, as previously noted the demister filters are failing and actual flow is between 350 and 450 cfm. The outlet valve for the operating blower is fully open. The valves (inlet and outlet) for the offline Blower 302 were both closed while Blower 301 is operating.

3.3 Enclosed LFG Ground Flare

The enclosed LFG ground flare consists of a combustor assembly, an insulated stack, a pilot gas assembly, three thermocouples, a flame arrestor, a shut-down valve, and three electrically actuated intake louvers. The system is currently operating using Thermocouple Two as a temperature monitor set to 1440 degrees Fahrenheit. Two of the three louvers are offline and closed. This provides better temperature control of the system by reducing overcompensation by the louver/actuator controls.

Periodically throughout the month of October the flare was experiencing difficulty staying lit. After about a month (early November 2019) of intermittent operation the system shut down indicating a burner controller unit error. HDR manually ran the flare and observed that it would light but would shut down shortly after lighting. In consultation with the system manufacturer it was determined that the UV flame arrestor malfunctioned and needed to be replace. The UV flame arrestor was replaced on November 18th and the system was restarted and has been operational since.

4 Landfill Gas System Overall Gas Evaluation

Typically, LFG is composed of methane, carbon dioxide, nitrogen, and, to a much lesser extent, oxygen. Typical LFG concentrations for methane (35%-60%), carbon dioxide (35%-60%), nitrogen (3%-12%), and oxygen (0%-5%) are expected at most landfills. Methane and carbon dioxide are produced through the bacteriological breakdown of organic matter under anaerobic conditions. If concentrations of nitrogen and oxygen gases increase above expected values, it is often an indication that intrusion of ambient air into the gas extraction system is occurring. This typically occurs when the gas extraction system is operating at extraction rates that are greater than the methane production rates. During monthly well balancing, gas extraction well valves are set to optimize methane concentrations and minimize oxygen and nitrogen concentrations in the mixture going to the flare.

LFG data is collected from each gas extraction well using a Landtec GEM™ 2000 meter (GEM 2000). The GEM 2000 measures the percentage of methane, carbon dioxide, and oxygen present in the LFG. The remaining gas is reported as "balance" gas and typically consists of nitrogen with low percentages (typically <1%) of trace gases. The meter is also used to measure suction pressure and differential pressure on above grade well heads at applicable gas extraction wells and leg valves. LFG is also monitored at the flare station and perimeter monitoring wells using the GEM 2000.

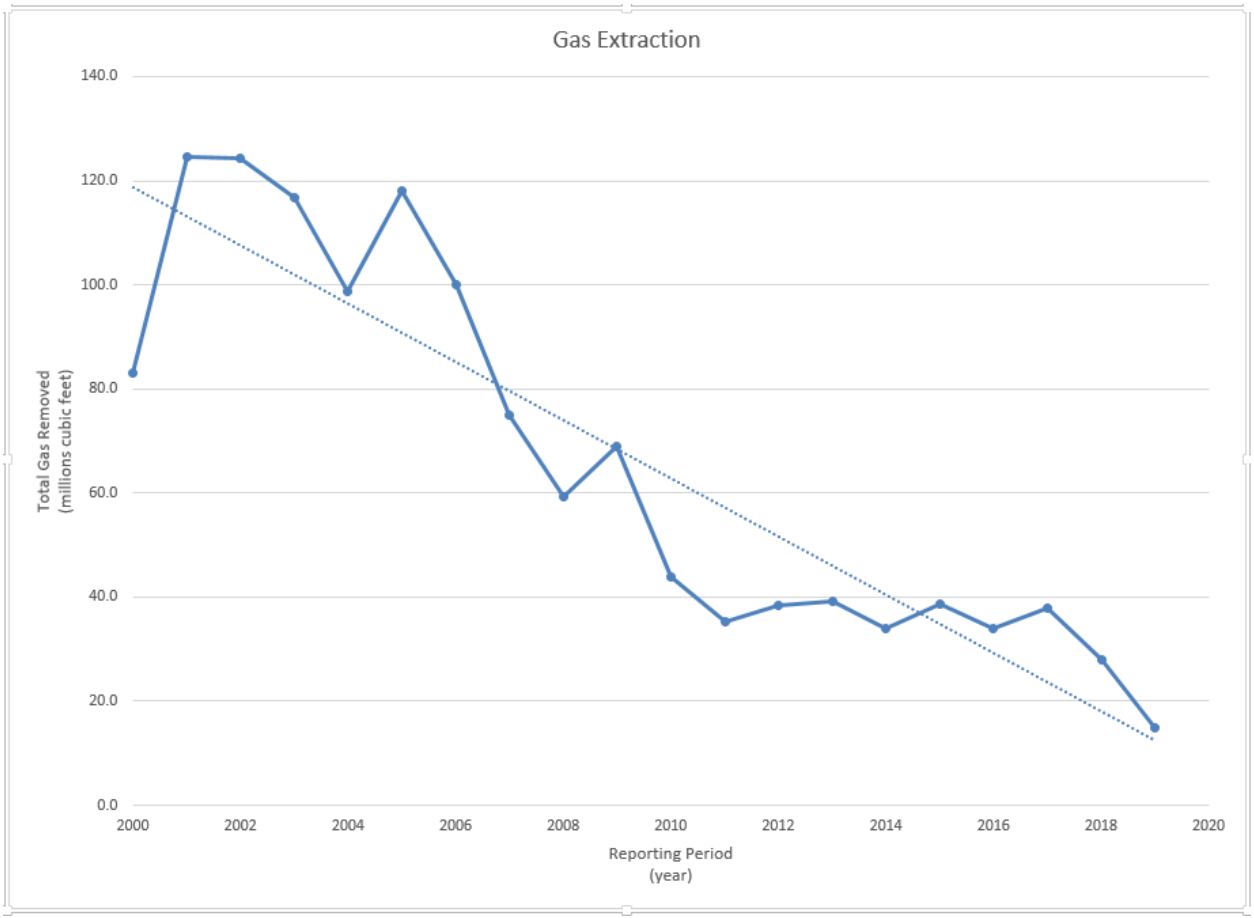
4.1 Quantitative Analysis of Gas Recovery

For the 2019 period, log sheet were maintained at the flare station to record the gas flow rate, cumulative and daily gas extraction volumes, flare temperatures, blower amperage, and cumulative blower run-time. The raw data sheets are included in this report as Appendix D.

The total LFG recovered in 2019 was approximately 15 million cubic feet. This is a significant drop in production compared to the previous year's volume (28 million cubic feet). This is likely a function of decreased production of methane gas at the landfill and the operational down time experience due to the electrical and UV sensor issues. The system operated for 2,348 hours in 2019, which to 65% runtime based on a 10 hour per day operation cycle. This is an increase over the previous reporting year's runtime of 33%.

Graph 4-1 illustrates the volume of landfill gas removed on an annual basis. The graph illustrates a decreasing trend in the volume of gas removed from the Landfill over the past 19 years. This is the typical and expected result of continued landfill gas removal.

Graph 4-1: Gas Volume Extraction Trends



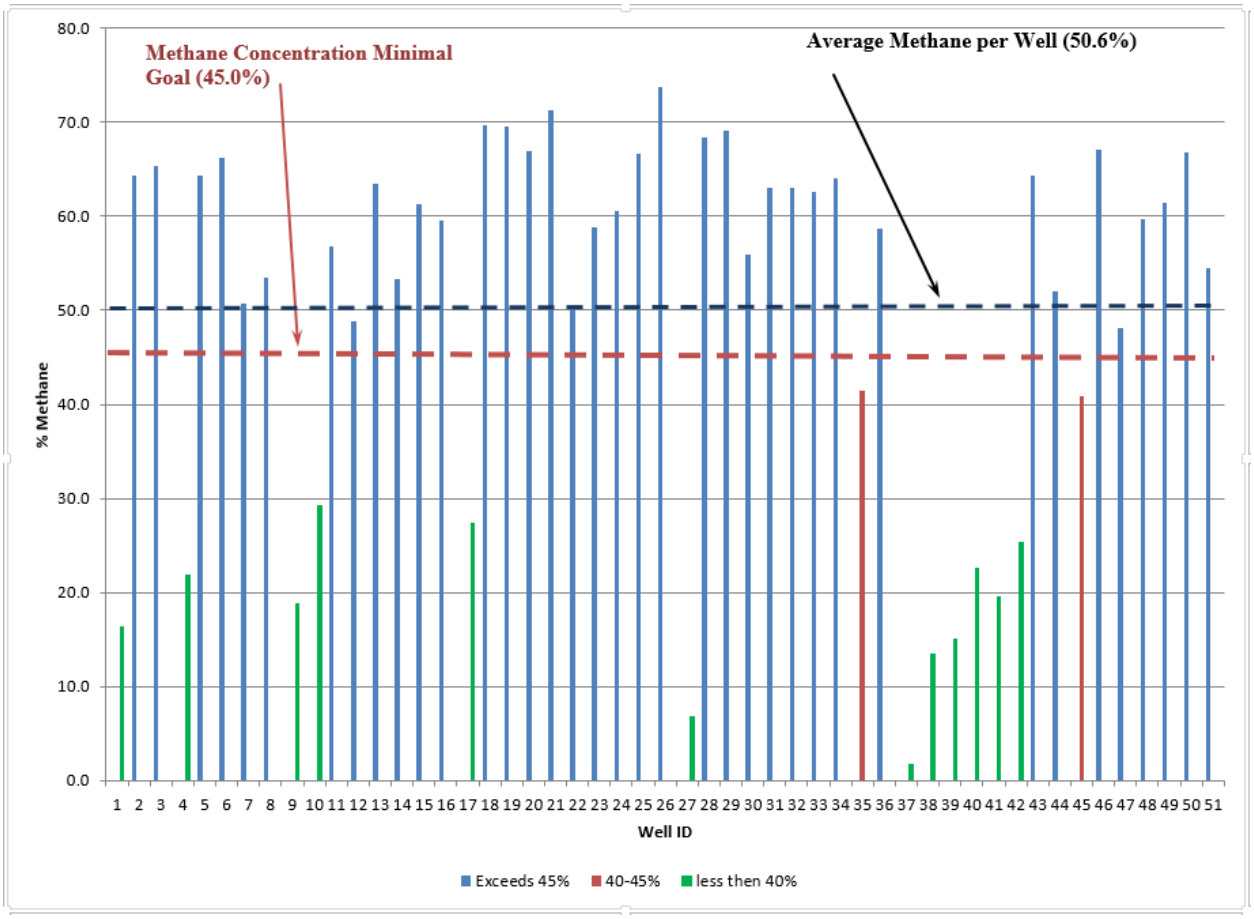
4.2 Qualitative Analysis of Gas Recovery

LFG quality is monitored at each of the 52 gas extraction wells and at the flare station. Optimal gas quality consists of a high methane concentration (greater than 45%) and low carbon dioxide, oxygen and nitrogen levels. Methane is required to sustain the flaring of the gas. The primary reason to burn LFG is public safety. Additionally, methane is a greenhouse gas with a global warming potential more than 20 times that of carbon dioxide.

The efficient combustion of LFG can be inhibited by carbon dioxide. Therefore, low levels of carbon dioxide are desired. Low oxygen at the well heads is also desirable because it is an indication that ambient air intrusion is not occurring and high concentrations of oxygen would increase the potential for LFG to exhibit flammable conditions outside of the flare station. Typically, LFG that is extracted from the Landfill is low in oxygen (<5%) and cannot support combustion.

At the flare station, oxygen is introduced and controlled by the flare actuator and louvers to create optimum burning conditions. Nitrogen has no effect on the system operation since it is an inert gas; however, the presence of nitrogen in excess of 10% may suggest ambient air intrusion. The gas quality averages for each well are illustrated in the graph below.

Graph 4-2 Average Methane Concentrations per Extraction Well



The average methane composition during this period was 50.6% (up from 39% the previous year). Thirty eight wells had an average methane concentration above the 45% methane goal. Thirteen of the thirty six wells were below the goal (>45%) but within 5% of it. The remaining twelve wells had average methane concentrations less than 40%. Ten of the twelve wells are located along the perimeter of the Landfill or in low lying areas. Diminishing methane levels are expected in these areas and data from the last 19 years, which show a reduction in methane production along the perimeter, confirms this. Methane production and accumulation along the Landfill perimeter remains low despite limiting the flow using valve settings.

It was also observed that there is an area of lower than expected methane production at the northwest side of the landfill (Figure 8). The southern extent of this area is located in an elevated area where typical methane production has exceeded the 40% threshold. It is not clear why methane production in this area is below normal.

Table 4-1 compares the average monthly methane level measured at the extraction wells to the average monthly methane composition measured at the flare station.

Table 4-1 Summary of Extraction Well Measurements 2019

Month	Average Methane in Well Field	Average Methane at Flare	Difference
	(%)	(%)	(%)
January	48.5	44.2	4.3
February	0.0	0.0	0.0
March	0.0	0.0	0.0
April	0.0	0.0	0.0
May*	48.8	0.0	48.8
June	45.4	45.8	-0.4
July**	52.6	44.7	7.9
August	57.1	44.2	12.9
September	54.9	33.4	21.5
October	0.0	0.0	0.0
November	53.9	43.8	10.1
December	47.1	41.0	6.1

*** - May 2019 readings were disregarded because no readings were collected at the flare station**
**** - July 2019 readings were disregarded because all the well heads were not surveyed**

Based on the data presented in Table 4-1 there is a measurable difference between the average percent methane in the well field versus the average percent methane measured at the flare station (Appendix E) during the months of August, September, and November. This may be due to increased landfill gas production at the well head related to warmer weather conditions during these time frames.

Smaller variances observed in other months are likely due to the absence of methane levels reported from the surface collectors (A and K). The surface collectors are located at a relatively flat portion of the Landfill where historic land filling activities were significantly less than the majority of the remaining Landfill areas. The leg valves for the surface collectors (A and K) are set at 25% and 5% open, respectively. However, both legs are a short distance from the flare and are more impacted by the suction of the blowers than most other leg valves located further from the header pipe. The end result is Landfill gases are removed from these areas in greater volume, especially at start-up, which likely contributes to failed restarts at the flare station.

Intrusion may be occurring at well heads where damaged sample ports and damaged flexible hoses have been observed. At these damaged areas, it is common to observe ambient air being drawn into the gas extraction system. These breaches are typically small and are temporarily sealed with duct tape until a more permanent remedy is in place such as the installation of new well head risers. These variances are less than values reported in previous years. This is likely due to ongoing updates to the gas extraction well heads, which have fewer leaks from damage ports/hoses, and are more capable of regulating flow. As more well heads are replaced, the overall quality of gas removed from each well has increased over time.

Any additional discrepancies that exist between landfill gases in the well field compared to the flare station are may attributed to a combination of factors including the following:

- individual well head valve settings,

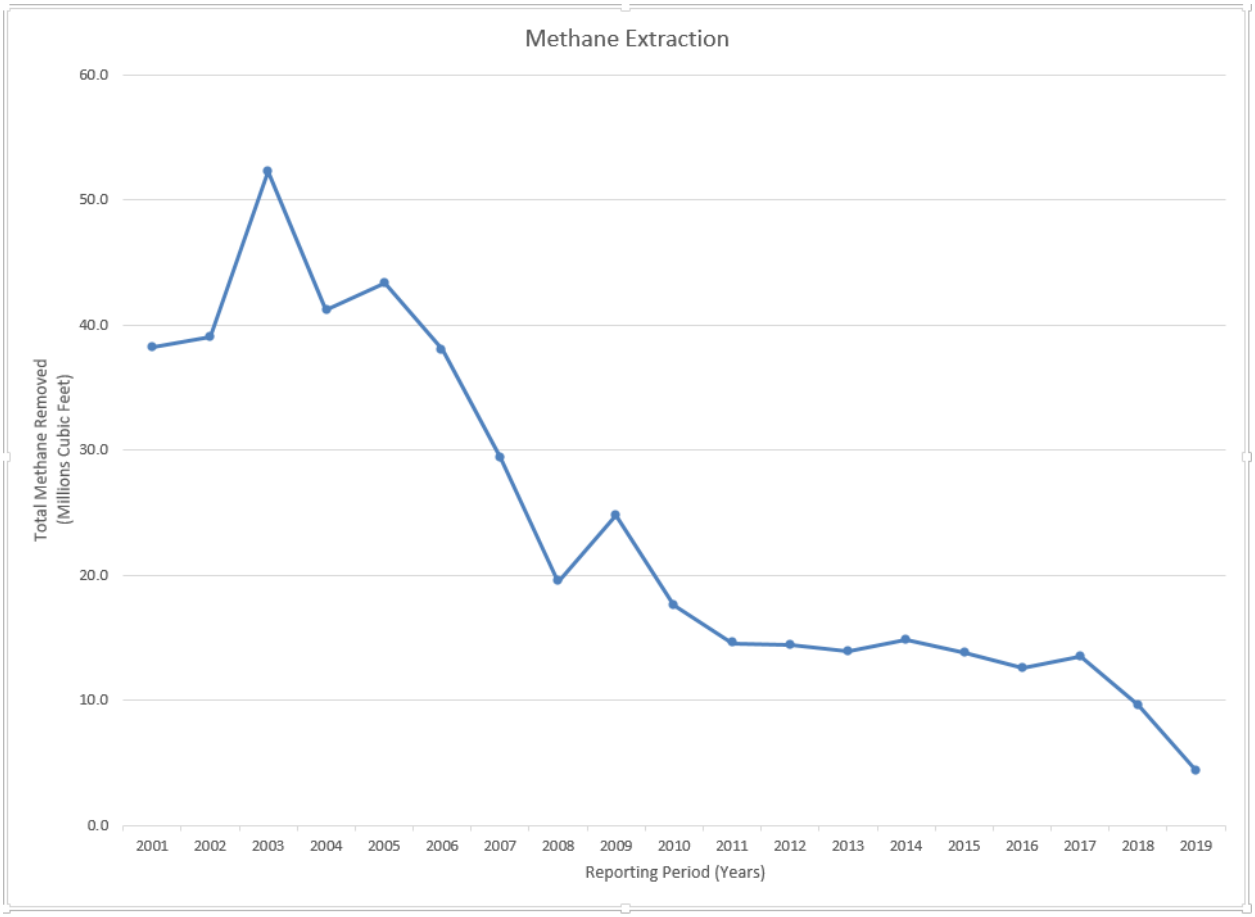
- time of day flare operation was observed, and
- lag-time attributed to the distance from individual wells to the flare.

Most of the poorest methane producing wells and surface collectors are located closest to the flare station, which places the greatest amount of vacuum pull on the poorest producing section of the Landfill. This has been augmented by restricting flow through valves to optimize the gas mixture.

Due to the fact that the data is collected on a monthly basis, the actual percentage or total methane removed as the gas composition recorded does not necessarily reflect the actual gas composition fluctuation throughout the entire run cycle over a daily, monthly, or annual period. The readings are recorded throughout well balancing and are consistent relative with one another; therefore, they can be used to approximate methane removal on a comparative daily, monthly and annual basis.

Graph 4-3 illustrates annual methane removal at the Landfill as an approximation based on field measurements recorded during monthly O&M events. An estimated 4.42 million cubic feet of methane were removed during the 2019 reporting period. The graph illustrates the decreasing rate of methane removal from the Landfill over the past 19 reporting periods.

Graph 4-3 Annual Methane Removal over Time



4.3 Off-Site Landfill Gas Monitoring

Evaluation of off-site monitoring wells is performed and a third-party consultant for the Town of Clarkstown and reported independently.

5 Other Landfill Gas Systems

This section provides the inspection/maintenance reports for:

- LFG Knockout Tank
- Aboveground LFG Condensate Storage Tank
- Landfill Final Cover System
- Leachate Collection System

5.1 LFG Knockout Tank

Condensate has not been historically observed at the knockout tank or the condensate pump station. Drip legs are located at the low points along each leg, except Leg L and along the eastern edge of the Landfill (DL-1), leaving condensate from the surface collectors, GE-1, GE-2 and Leg L as the only areas that are not influenced by any of the drip leg assemblies. Most of these areas are relatively flat and historically there appears to be a minimal amount of landfill material placed in this area. The anticipated development and accumulation of condensate is minimal; therefore, little to no condensate would be expected in the knockout tank. The exceptions are GE-50, GE-51, and GE-52 – all of which are located along Leg L. These three wells are located along the east slope and top of the Landfill where condensate is anticipated to develop and accumulate at greater frequency and volume. Based upon the grade change and extraction well location, accumulation of condensate and ultimate blockage of the Leg L with condensate occur between wells GE-50 and GE-49.

5.2 Aboveground LFG Condensate Storage Tank

No condensate has been observed in the storage tank as discussed since the installation of the system.

5.3 Landfill Final Cover System

The Landfill Final Cover System is inspected for drainage and erosion quarterly in accordance with the procedures described on the Final Cover Inspection checklist and Form FCS-1, which have been included in Appendix F.

The Landfill is designed with a system of vegetated berms, dikes, and drainage ditches. Eight drainage basins are located at the Landfill. Drainage at the Landfill has been adequate and no reported instances of erosion or ponding have been documented during this reporting period. However, several areas of the Landfill have been identified as being

'soft', particularly in the areas between GE-36 and GE-37, the area around GE-4 and the area between GE-3, GE-2 and GE-10.

Solar panels have been installed on the Landfill cap along the eastern side of the Landfill. The solar panel field occupies roughly 15% of the landfill footprint. This area is still maintained by the Town of Clarkstown.

The Landfill is surrounded by an access road shown in Appendix G. A second road is located along the crest of the Landfill. During monthly site visits, HDR inspects the roads for potholes, ponding, settlement or erosion and documents the inspections on Roadway Inspection Sheets (Appendix F).

5.4 Leachate Collection System

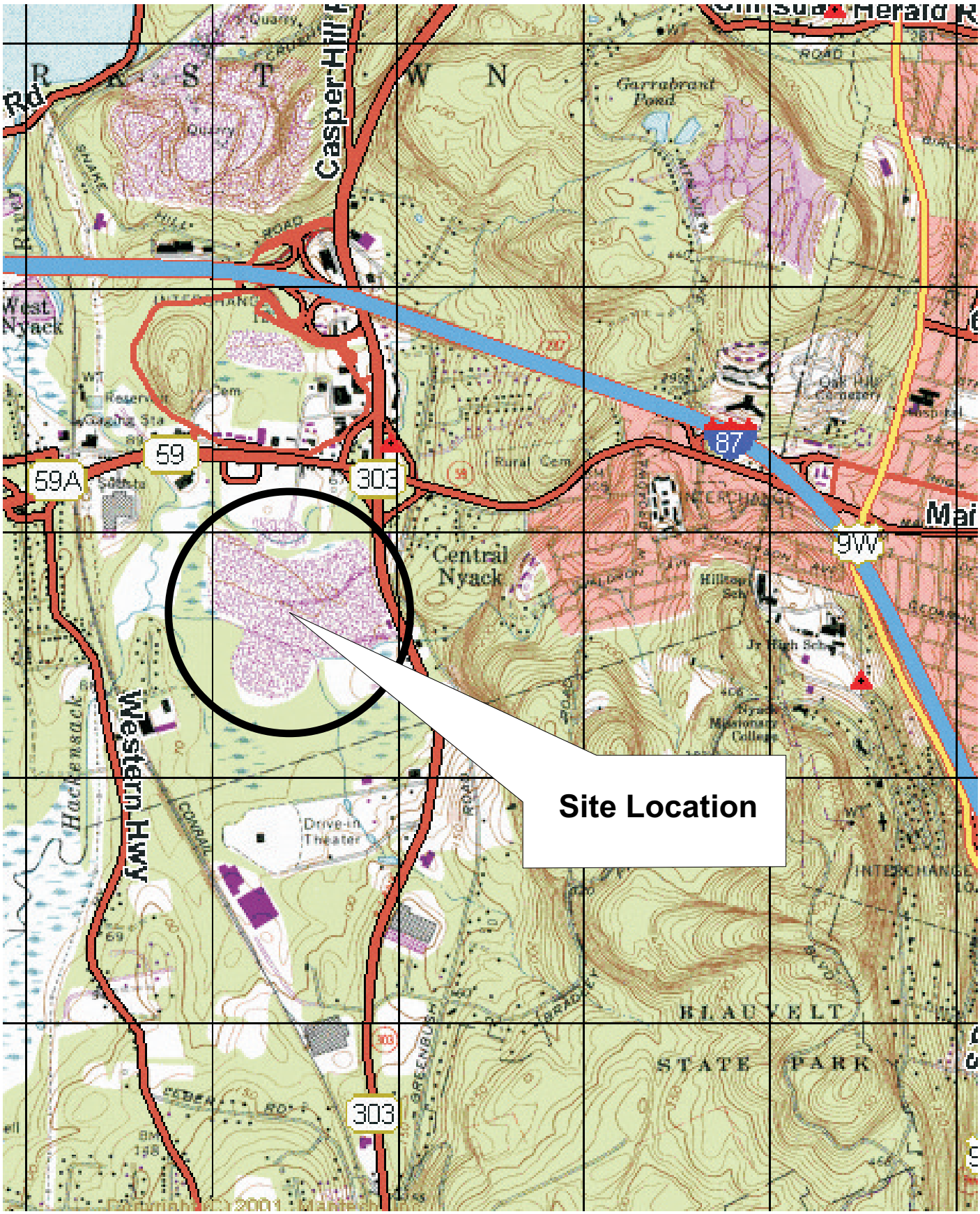
Leachate from each collection chamber is pumped directly into the sanitary sewer system managed by Rockland County Sewer District #1. A flow meter was installed by the Town at the end of the leachate line prior to the sewer pump house in November 2016 to track the volume of leachate discharged to the sanitary sewer system. No flow has been recorded to date. Leachate is observed in the collection chambers during inspections but at levels too low to be trigger discharge to the sewer system. Leachate production is expected to diminish over time.

6 Conclusions

Landfill operations have been effective in managing LFG and leachate during this reporting period. The levels of methane at the Landfill continue to diminish with time. Diminishing levels are most evident around the perimeter of the Landfill. The Town continues to invest in upgrading and improving the LFG collection system at the site. It is anticipated that additional gas extraction well head upgrades will continue as necessary.

A difference between the methane levels at the well field versus the methane level at the flare continues to be noted. HDR will continue to evaluate the levels between the landfill gas extraction wells and the leg valves to identify any locations that explain the discrepancy. HDR will also continue to balance the LFG collection system as necessary to optimize the running time of the system.

Figures

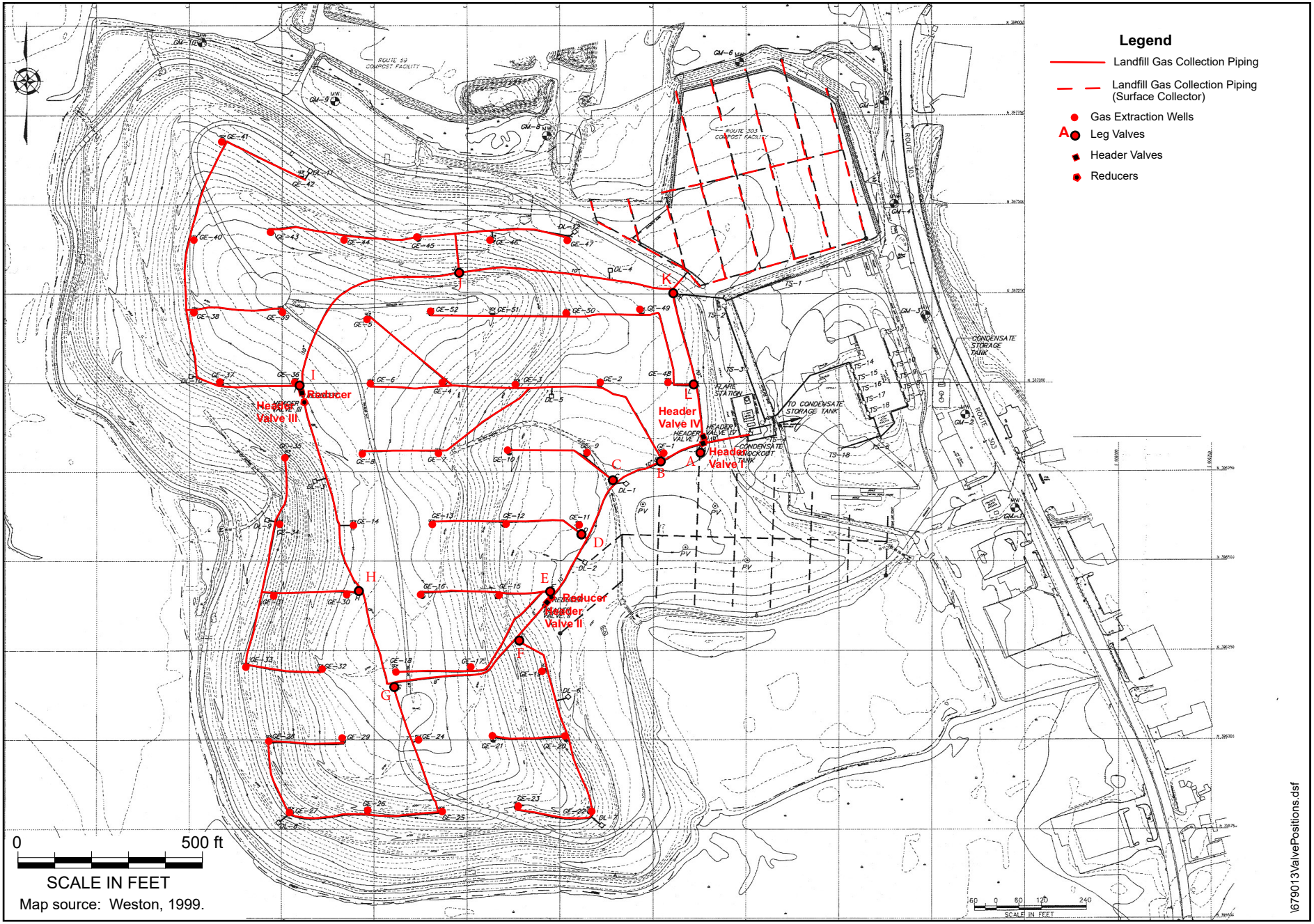


Source: US Quadrangle Nyack, NY 1967, Photorevised 1979

Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
404 Airport Executive Park
Nanuet, NY 10954

Clarkstown Landfill Location
Clarkstown Landfill
West Nyack, NY 10994

Figure 1



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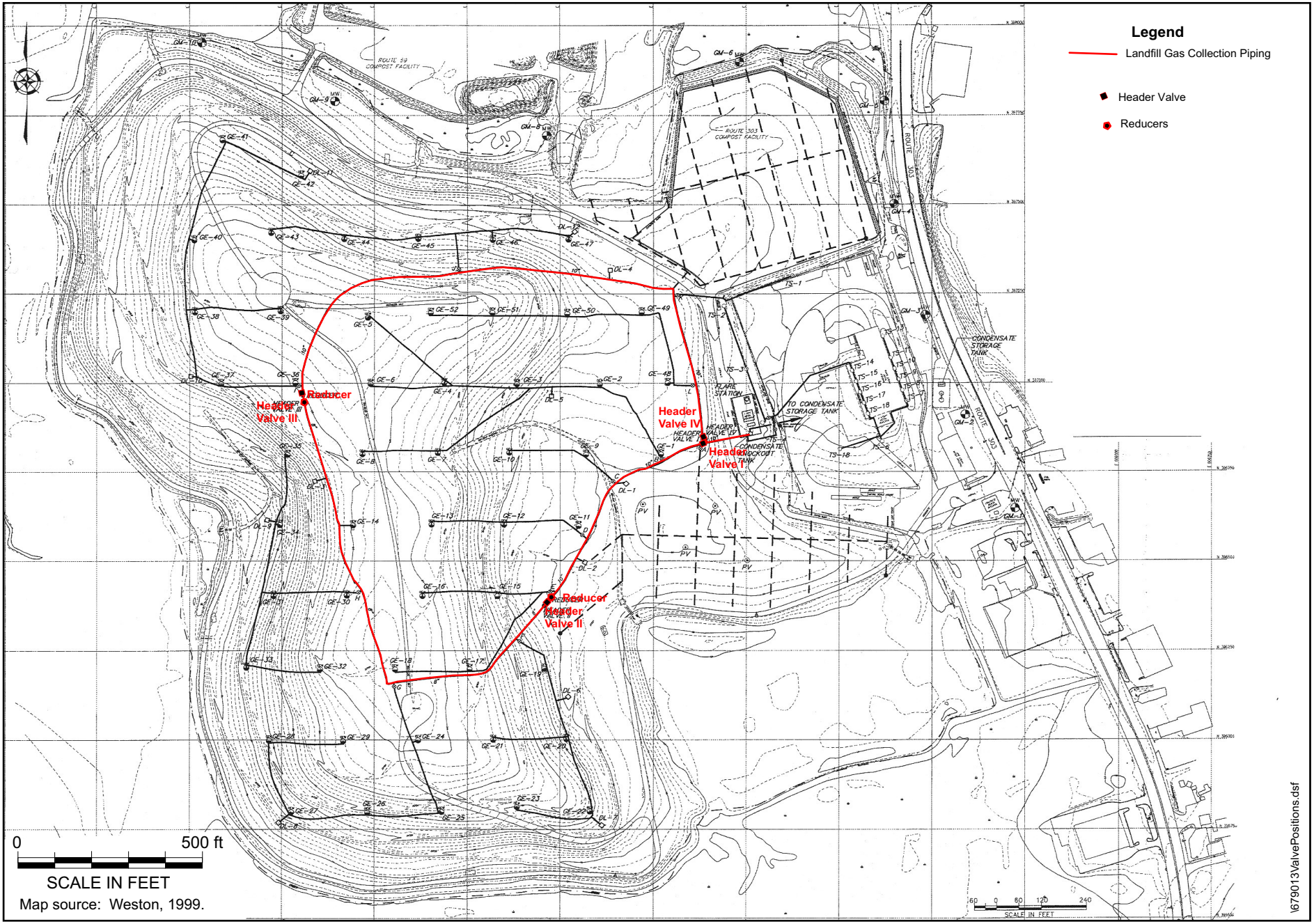
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

404 Airport Executive Park
Nanuet, NY 10954

Landfill Gas Collection Network
Clarkstown Landfill
West Nyack, NY 10994

Figure 2



Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

404 Airport Executive Park
Nanuet, NY 10954

Landfill Gas Header Pipe
Clarkstown Landfill
West Nyack, NY 10994

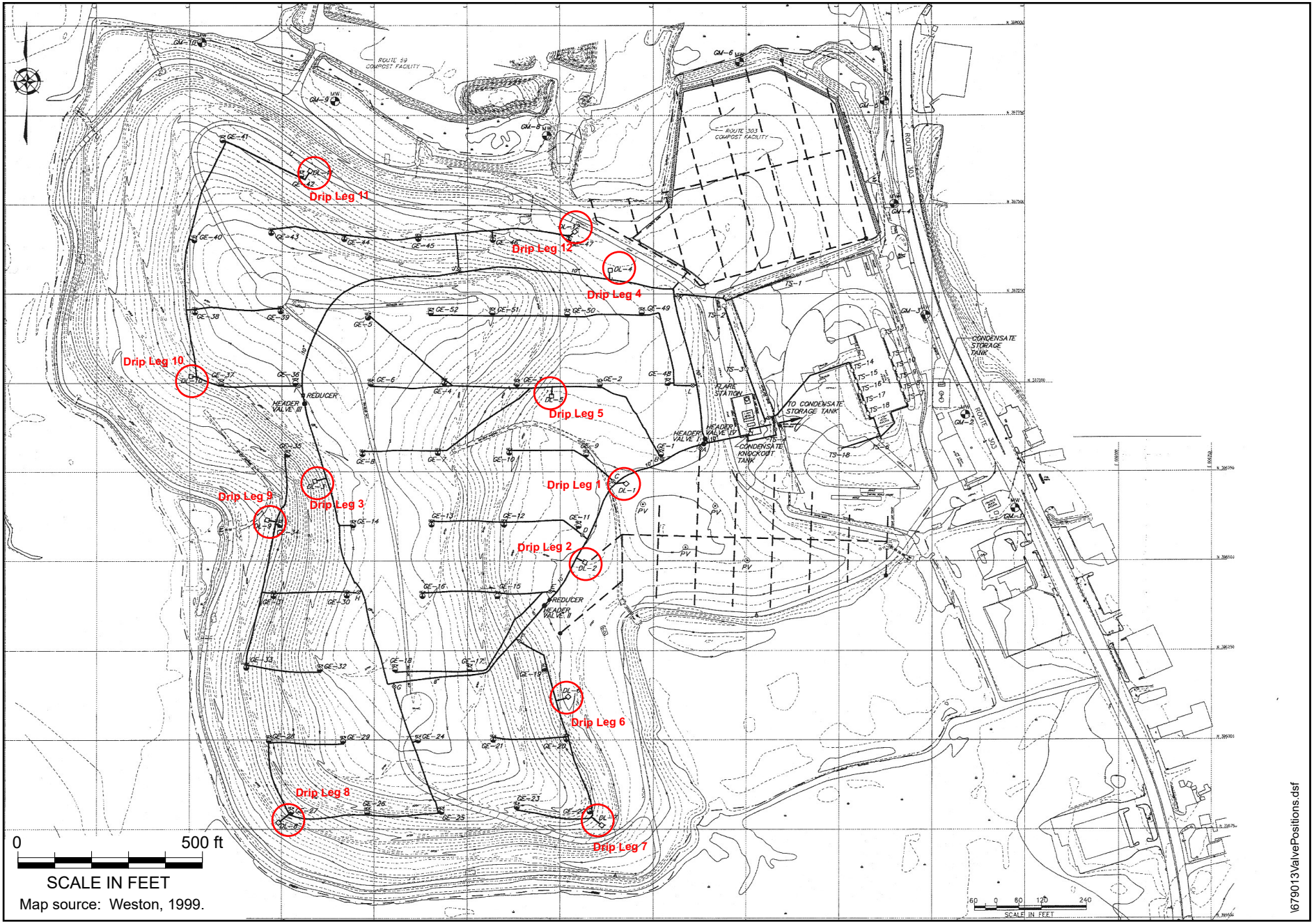
Figure 3

Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

404 Airport Executive Park
Nanuet, NY 10954

Surface Collector Network
Clarkstown Landfill
West Nyack, NY 10994

Figure 4

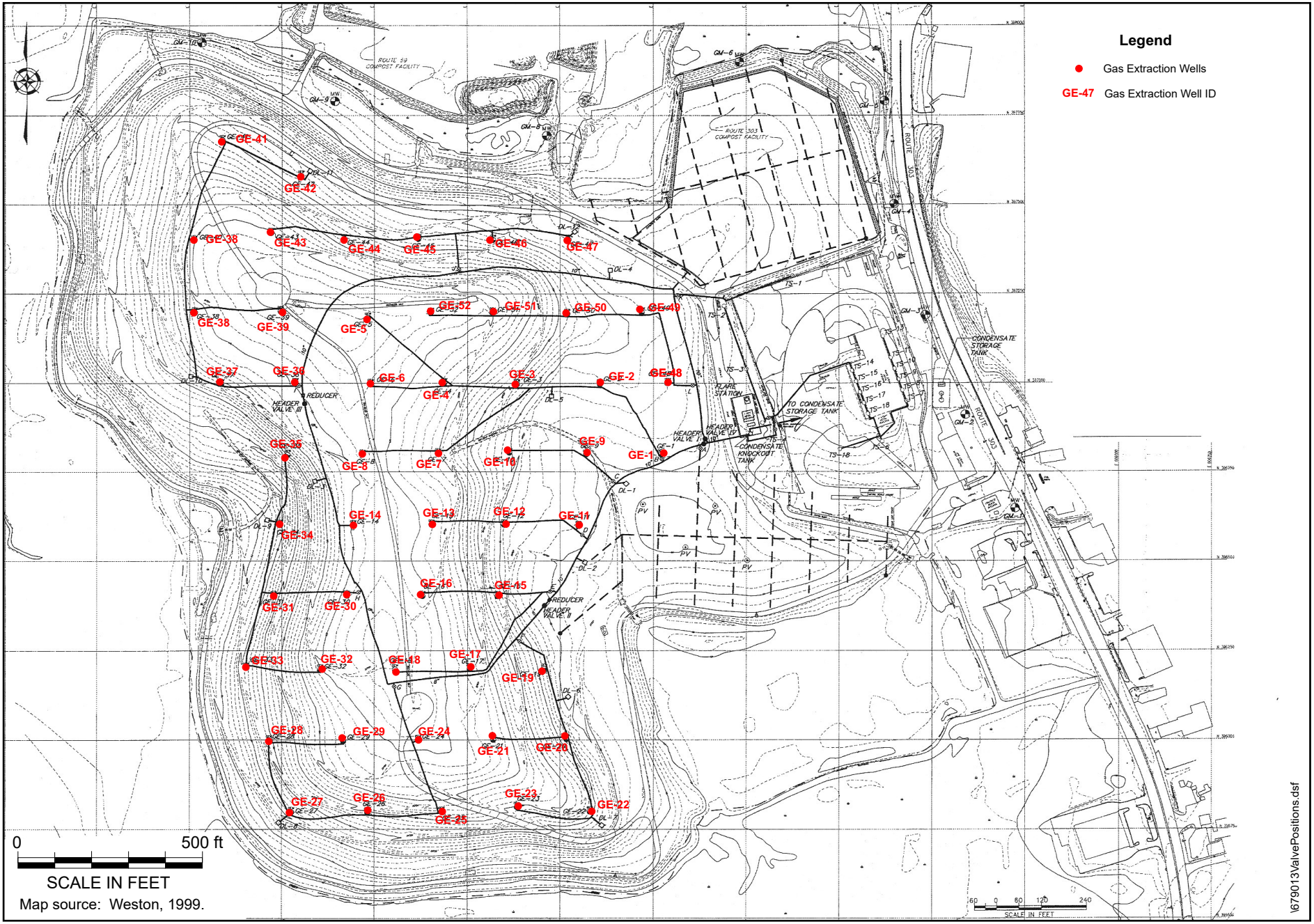


Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

404 Airport Executive Park
Nanuet, NY 10954

Drip Leg Assembly Locations
Clarkstown Landfill
West Nyack, NY 10994

Figure 5

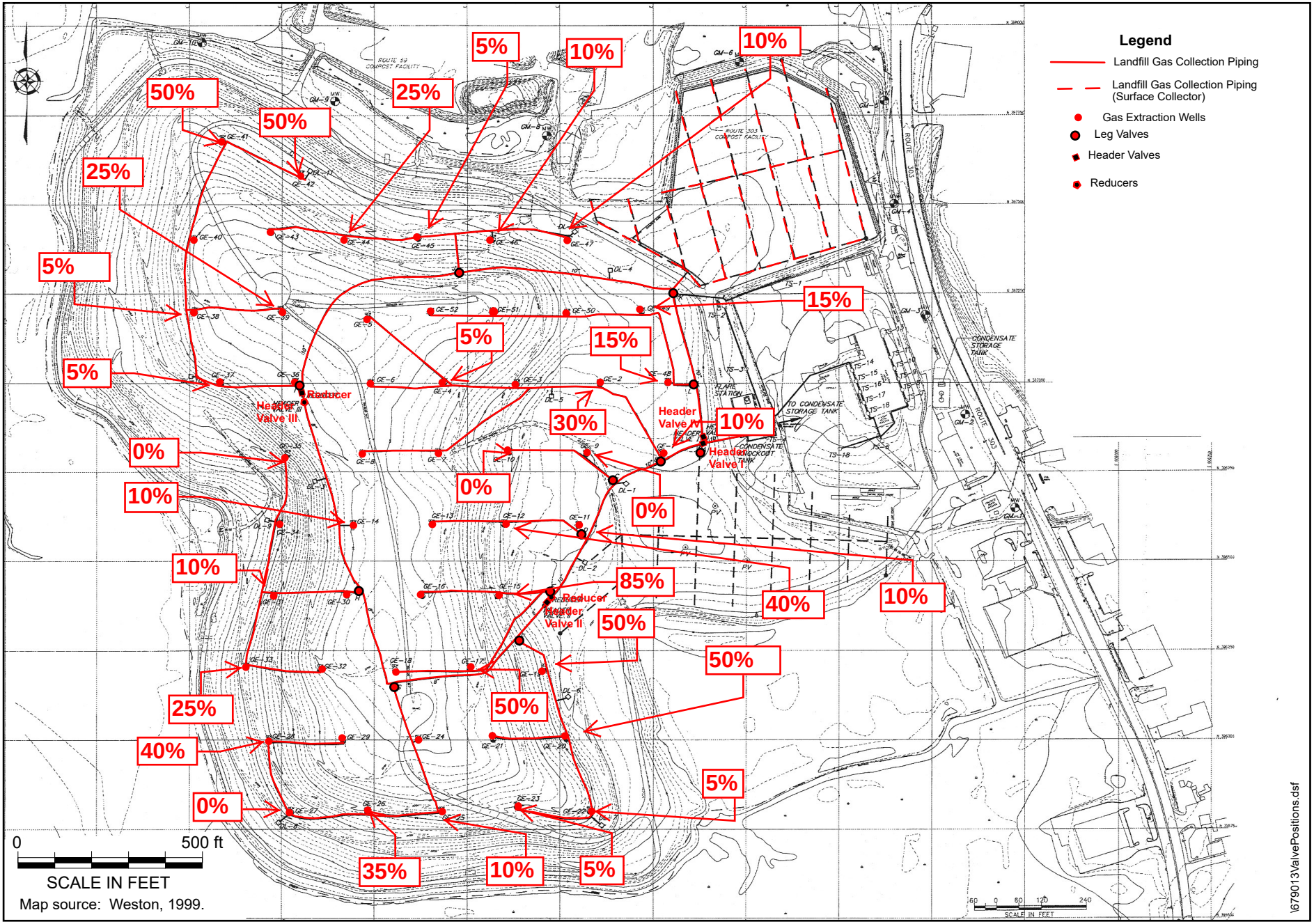


Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

404 Airport Executive Park
Nanuet, NY 10954

Gas Extraction Wells
Clarkstown Landfill
West Nyack, NY 10994

Figure 6



Henningson, Durham & Richardson Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

404 Airport Executive Park
Nanuet, NY 10954

Well Head Valve Settings
Clarkstown Landfill
West Nyack, NY 10994

Figure 7

Henningson, Durham & Richardson Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

404 Airport Executive Park
Nanuet, NY 10954

Localized Area of Low Methane Readings
Clarkstown Landfill
West Nyack, NY 10994

Figure 8

A

FS-3 Forms

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 1/18/2019

Inspector's Initials: MVP

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 2/26/2019 Inspector's Initials: MVP

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 3/15/2019 Inspector's Initials: MVP

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 4/19/2019 Inspector's Initials: MVP

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 5/28/2019 Inspector's Initials: MVP

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 6/11/2019 Inspector's Initials: MVP

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 7/19/2019 Inspector's Initials: MVP

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 8/21/2018 Inspector's Initials: MTP

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 9/24/2019 Inspector's Initials: MTP

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 10/24/2019 Inspector's Initials: BKM

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 11/19/2019 Inspector's Initials: BKM

FORM FS-3
INSPECTION CHECKLIST – MONTHLY TASKS
LANDFILL GAS SYSTEM

Item	Inspection Item	Check Box
Gas Extraction Wells, Visually inspect or improper operation during monthly well balancing. Check for:		
1	Settlement of the well, vault, or surrounding cover	NS
2	Leakage of air or gas either in or around the well	X
3	Liquids pooling in the wellhead vaults	X
4	Condensate accumulating in the flexible connection between well and pipe manifold	X
5	Stress and/or ripping of the liner boots due to landfill settlement	X
Gas Collection Piping, Visually inspect valve and valve vaults for damage or improper operation. Check for:		
6	Settlement of the vault, or surrounding cover	NS
7	Leakage of air or gas either in or around the vault	X
8	Liquids pooling in the vault	X
9	Improper slope as a result of settlement	X
10	Landfill surface above buried pipe manifold for any signs of differential settlement	X
11	Any possibility of line blockage or breakage	X
Knockout Tank and Surrounding Area – Visually Inspect and Note:		
12	Any settling or buoyant rising	X
Surface Collectors:		
13	Visually inspect collector areas for signs of excessive differential settlement	X
14	Investigate any possibility of blockage or breakage as a result of condensate accumulation and/or freezing	X
Aboveground Condensate Storage Tank		
15	Inspect anchor bolts for firmness and integrity	X
Enclosed Ground Flare		
16	Inspect and periodically clean out the flame arrestor	X

Notes:
1 Use a check in the box to indicate that the specific item in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 12/24/2019 Inspector's Initials: BKM

B

DP-1Forms

February 11, 2020

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 1/18/2019 Inspector's Initials: MVP

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 2/26/2019 Inspector's Initials: MVP

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 3/15/2019 Inspector's Initials: MVP

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 6/11/2019 Inspector's Initials: MVP

DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 7/19/2019 Inspector's Initials: MVP

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 8/21/2019 Inspector's Initials: MTP

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 9/24/2019 Inspector's Initials: MTP

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 10/24/2019 Inspector's Initials: BKM

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 11/19/2019 Inspector's Initials: BKM

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 12/24/2019 Inspector's Initials: BKM

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 4/19/2019 Inspector's Initials: MVP

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

REFERENCE INSPECTION FORM NO: 1 **RFW NOTIFICATION REFERRAL NO.:_____**

LOCATION: GE

PROBLEM/DEFICIENCY IDENTIFICATION:
Many of the vaults are experiencing the effects of settling.
ACTION TAKEN:
Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault door are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.
RECOMMENDATIONS:
Replace with new above grade well heads (eliminate vaults).

Date: 5/28/2019 Inspector's Initials: MVP

C

Well Balancing Forms

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
B	1/18/2019	1	13.7	7.2	13.3	64.0	-6.3	0.073	23.0	31	5% Open
B	2/1/2019	1	Flare not operating								
B	3/1/2019	1	Flare unpowered								
B	4/1/2019	1	Flare unpowered								
B	5/28/2019	1	18.5	6.3	14.6	61.4	-5.3	0.067		61	5% Open
B	6/11/2019	1	16.5	8.6	14.5	66.2	-4.9	0.054		68	5% Open
B	7/19/2019	1	22.9	11.2	7.5	59.5	-4.2	0.031		87	5% Open
B	8/21/2019	1	29.4	17.0	4.8	48.8	-3.3	0.106		83	5% Open
B	9/24/2019	1	2.0	1.1	16.9	80.0	-4.3	0.011		73.0	5% Open
B	10/24/2019	1	Flare was down due to UV Sensor Failure								
B	11/19/2019	1	6.4	3.2	15.6	74.3	-5.1	-0.049		45.0	10% Open
B	12/24/2019	1	22.2	9.8	10.6	57.4	-5.1	-0.086		56	10% Open
B	1/18/2019	2	67.9	29.8	1.7	0.1	-3.2	0.016	11.1	54	30% Open
B	2/1/2019	2	Flare not operating								
B	3/1/2019	2	Flare unpowered								
B	4/1/2019	2	Flare unpowered								
B	5/28/2019	2	62.3	18.6	1.1	0.1	-3.5	0.023		65	30% Open
B	6/11/2019	2	59.6	13.5	0.8	24.6	-4.1	0.064		67	30% Open
B	7/19/2019	2	62.5	13.1	0.0	25.7	-4.2	0.044		88	30% Open
B	8/21/2019	2	59.8	25.7	0.3	16.3	-2.0	0.064		71	30% Open
B	9/24/2019	2	66.6	26.9	0.0	6.5	-2.9	0.071		66	30% Open
B	10/24/2019	2	Flare was down due to UV Sensor Failure								
B	11/19/2019	2	70.9	26.2	0.3	2.6	-4.3	0.043		58	30% Open
B	12/24/2019	2	64.6	24.5	1.1	9.8	-3.6	0.084		57	30% Open
B	1/18/2019	3	63.6	23.7	10.1	0.2				42	100% Open
B	2/1/2019	3	Flare not operating								
B	3/1/2019	3	Flare unpowered								
B	4/1/2019	3	Flare unpowered								
B	5/28/2019	3	66.3	21.6	11.4	0.1	-3.4	0.055		69	100% Open
B	6/11/2019	3	62.5	20.4	9.8	8.6	-3.5	0.117		67	100% Open
B	7/19/2019	3	63.1	21.5	11.2	7.6	-4.1	0.098		87	100% Open
B	8/21/2019	3	49.9	18.5	0.2	31.4	0.0	0.078		80	100% Open
B	9/24/2019	3	73.7	20.9	0.9	4.5	-3.7	0.014		70	100% Open
B	10/24/2019	3	Flare was down due to UV Sensor Failure								
B	11/19/2019	3	75.2	22.6	2.0	0.2	-5.7	-0.023		54	100% Open
B	12/24/2019	3	67.9	22.0	0.2	9.9	-3.7	-0.703		57	100% Open
B	1/18/2019	4	17.3	9.9	5.8	66.6	-4.5	0.145	33.5	31	5% Open
B	2/1/2019	4	Flare not operating								
B	3/1/2019	4	Flare unpowered								
B	4/1/2019	4	Flare unpowered								
B	5/28/2019	4	38.5	7.5	3.2	57.3	-3.8	0.115		64	5% Open
B	6/11/2019	4	21.5	10.6	4.0	62.8	-3.9	0.113		65	5% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
B	7/19/2019	4	31.5	11.6	2.1	63.8	-3.3	0.092		86	5% Open
B	8/21/2019	4	9.6	16.7	3.3	70.4	-0.1	0.062		83	5% Open
B	9/24/2019	4	1.9	2.4	15.6	80.1	-4.1	0.052		71	5% Open
B	10/24/2019	4	Flare was down due to UV Sensor Failure								
B	11/19/2019	4	45.2	9.6	6.9	38.3	-5.8	-0.045		46	5% Open
B	12/24/2019	4	19.5	4.6	9.7	66.2	-3.5	-0.007		56	5% Open
B	1/18/2019	5	62.2	26.0	1.6	9.7	-5.4	0.085	25.6	39	100% Open
B	2/1/2019	5	Flare not operating								
B	3/1/2019	5	Flare unpowered								
B	4/1/2019	5	Flare unpowered								
B	5/28/2019	5	64.0	12.5	0.3	11.8	-3.9	0.114		67	100% Open
B	6/11/2019	5	61.5	24.5	2.3	13.6	-4.2	0.068		62	100% Open
B	7/19/2019	5	58.1	15.3	3.2	15.7	-3.1	0.071		89	100% Open
B	8/21/2019	5	63.7	24.7	0.0	11.6	-0.1	0.017		78	100% Open
B	9/24/2019	5	73.8	23.6	0.0	2.6	-3.6	0.057		73	100% Open
B	10/24/2019	5	Flare was down due to UV Sensor Failure								
B	11/19/2019	5	74.7	24.9	0.0	0.4	-5.2	-0.018		68	100% Open
B	12/24/2019	5	56.3	23.7	4.6	15.4	-3.0	-0.030		59	100% Open
B	1/18/2019	6	63.8	27.3	3.4	0.0	-6.3	0.110	29.2	41	100% Open
B	2/1/2019	6	Flare not operating								
B	3/1/2019	6	Flare unpowered								
B	4/1/2019	6	Flare unpowered								
B	5/28/2019	6	71.3	24.3	0.1	3.8	-5.4	0.097		62	100% Open
B	6/11/2019	6	61.5	24.2	2.8	3.5	-5.2	0.075		61	100% Open
B	7/19/2019	6	58.2	16.5	0.0	24.8	-3.7	0.113		92	100% Open
B	8/21/2019	6	70.7	22.7	0.0	6.6	-0.2	0.024		83	100% Open
B	9/24/2019	6	76.3	23.6	0.0	0.1	-3.7	0.043		72	100% Open
B	10/24/2019	6	Flare was down due to UV Sensor Failure								
B	11/19/2019	6	74.3	25.2	0.4	0.1	-5.6	-0.061		50	100% Open
B	12/24/2019	6	53.6	22.1	0.9	23.9	-3.2	-0.012		53	100% Open
B	1/18/2019	7	52.8	21.7	8.2	17.8	-4.2	0.108	28.8	35	100% Open
B	2/1/2019	7	Flare not operating								
B	3/1/2019	7	Flare unpowered								
B	4/1/2019	7	Flare unpowered								
B	5/28/2019	7	66.4	19.4	5.8	15.2	-5.1	0.099		66	100% Open
B	6/11/2019	7	60.5	24.5	12.6	6.8	-4.2	0.056		62	100% Open
B	7/19/2019	7	59.4	20.0	13.4	5.7	-3.6	0.082		90	100% Open
B	8/21/2019	7	22.8	11.9	0.1	65.2	0.0	0.039		86	100% Open
B	9/24/2019	7	44.4	15.0	0.8	39.8	-1.6	0.058		71	100% Open
B	10/24/2019	7	Flare was down due to UV Sensor Failure								
B	11/19/2019	7	63.0	16.5	0.2	20.3	-7.5	0.070		46	100% Open
B	12/24/2019	7	36.1	15.3	0.1	48.5	-3.5	-0.015		48	100% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
B	1/18/2019	8	56.0	18.7	1.1	21.4	-6.9	0.125	31.0	37	100% Open
B	2/1/2019	8	Flare not operating								
B	3/1/2019	8	Flare unpowered								
B	4/1/2019	8	Flare unpowered								
B	5/28/2019	8	54.6	17.5	0.9	17.6	.5.3	0.093		65	100% Open
B	6/11/2019	8	45.2	16.2	3.2	37.5	-5.1	0.115		64	100% Open
B	7/19/2019	8	52.4	15.1	0.0	29.7	-4.2	0.087		88	100% Open
B	8/21/2019	8	32.5	11.3	2.7	53.5	-0.4	0.003		81	100% Open
B	9/24/2019	8	71.4	15.1	0.0	13.5	-3.8	0.031		72	100% Open
B	10/24/2019	8	Flare was down due to UV Sensor Failure								
B	11/19/2019	8	69.2	15.0	0.4	15.4	-4.0	-0.073		45	100% Open
B	12/24/2019	8	46.1	14.9	0.6	38.4	-3.6	0.023		49	100% Open
C	1/18/2019	9	22.3	4.1	9.3	60.5	-1.4	0.060	21.5	35	5% Open
C	2/1/2019	9	Flare not operating								
C	3/1/2019	9	Flare unpowered								
C	4/1/2019	9	Flare unpowered								
C	5/28/2019	9	31.4	3.2	7.7	58.3	-0.1	0.013		59	5% Open
C	6/11/2019	9	24.2	5.5	12.5	58.2	-3.2	0.087		68	5% Open
C	7/19/2019	9	21.3	12.4	7.7	61.3	-0.9	0.032		88	5% Open
C	8/21/2019	9	33.6	14.5	7.9	44.0	-0.2	0.040		87	5% Open
C	9/24/2019	9	0.2	0.0	17.4	82.4	-1.4	0.045		76	5% Open
C	10/24/2019	9	Flare was down due to UV Sensor Failure								
C	11/19/2019	9	3.0	1.5	17.1	78.4	-2.3	-0.036		45	0% Open
C	12/24/2019	9	15.4	5.5	13.7	65.4	-1.5	-0.015		57	0% Open
C	1/18/2019	10	34.4	21.2	10.0	33.7	-0.1				20% open
C	2/1/2019	10	Flare not operating								
C	3/1/2019	10	Flare unpowered								
C	4/1/2019	10	Flare unpowered								
C	5/28/2019	10	29.5	18.7	8.3	42.8	-0.1				20% open
C	6/11/2019	10	35.5	18.4	12.7	37.2	-0.2				20% open
C	7/19/2019	10	41.2	17.5	3.6	44.7	-0.1				20% open
C	8/21/2019	10	65.1	25.5	0.0	9.4	0.0	-		68	20% open
C	9/24/2019	10	0.3	0.0	17.0	82.7	0.0	-		80	20% open
C	10/24/2019	10	Flare was down due to UV Sensor Failure								
C	11/19/2019	10	0.5	0.1	17.6	81.8	-1.0	0.988		43	0% open
C	12/24/2019	10	27.2	12.5	9.6	56.7	-0.7	1.150		43	0% open
D	1/18/2019	11	50.3	26.0	5.3	4.0	-0.4	0.016	11.1	37	10% Open
D	2/1/2019	11	Flare not operating								
D	3/1/2019	11	Flare unpowered								
D	4/1/2019	11	Flare unpowered								
D	5/28/2019	11	48.6	24.1	6.4	5.9	-0.5	0.023		64	10% Open
D	6/11/2019	11	61.5	18.7	7.6	5.8	-0.3	0.023		61	10% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
D	7/19/2019	11	58.5	16.4	4.4	12.6	-0.1	0.016		88	10% Open
D	8/21/2019	11	57.7	24.1	0.3	17.9	-0.1	0.038		81	10% Open
D	9/24/2019	11	63.6	25.2	0.0	11.2	-0.8	0.041		72	10% Open
D	10/24/2019	11	Flare was down due to UV Sensor Failure								
D	11/19/2019	11	66.8	24.8	0.0	8.4	-0.9	-0.199		45	10% Open
D	12/24/2019	11	46.9	21.6	0.3	31.2	-0.7	0.285		50	10% Open
D	1/18/2019	12	40.6	22.6	12.5	11.0	-4.3	0.033	16.0	32	40% Open
D	2/1/2019	12	Flare not operating								
D	3/1/2019	12	Flare unpowered								
D	4/1/2019	12	Flare unpowered								
D	5/28/2019	12	37.5	21.8	7.3	15.4	-5.1	0.043		64	40% Open
D	6/11/2019	12	45.8	17.0	13.2	24.2	-3.1	0.059		65	40% Open
D	7/19/2019	12	51.5	16.5	12.5	23.6	-4.4	0.061		85	40% Open
D	8/21/2019	12	59.9	22.3	2.4	15.1	-3.7	0.039		85	40% Open
D	9/24/2019	12	68.7	26.8	0.9	3.6	-4.2	0.019		72	40% Open
D	10/24/2019	12	Flare was down due to UV Sensor Failure								
D	11/19/2019	12	39.6	18.0	6.7	35.7	-4.3	-0.232		56	40% Open
D	12/24/2019	12	47.4	19.7	5.2	27.7	-4.9	0.037		50	40% Open
D	1/18/2019	13	59.3	25.4	1.2	14.5	-2.9	0.145	33.0	49	100% Open
D	2/1/2019	13	Flare not operating								
D	3/1/2019	13	Flare unpowered								
D	4/1/2019	13	Flare unpowered								
D	5/28/2019	13	61.4	24.3	3.2	16.5	-3.1	0.094		61	100% Open
D	6/11/2019	13	68.7	21.6	2.3	8.8	-3.8	0.091		65	100% Open
D	7/19/2019	13	66.2	20.4	1.5	10.4	-3.9	0.089		90	100% Open
D	8/21/2019	13	60.3	19.8	0.9	19.0	-4.0	0.097		79	100% Open
D	9/24/2019	13	61.7	21.7	6.3	16.3	-4.2	0.124		71	100% Open
D	10/24/2019	13	Flare was down due to UV Sensor Failure								
D	11/19/2019	13	63.7	22.7	0.6	13.0	-3.2	-0.005		52	100% Open
D	12/24/2019	13	66.5	21.7	1.0	10.8	-3.8	0.208		55	100% Open
None	1/18/2019	14	74.2	18.7	1.8	15.5				34	10% Open
None	2/1/2019	14	Flare not operating								
None	3/1/2019	14	Flare unpowered								
None	4/1/2019	14	Flare unpowered								
None	5/28/2019	14	68.5	19.2	0.4	14.9	-3.6	0.075		66	10% Open
None	6/11/2019	14	71.5	21.4	0.2	8.9	-4.5	0.127		66	10% Open
None	7/19/2019	14									10% Open
None	8/21/2019	14	36.4	17.4	0.0	46.2	-3.7	0.018		77	10% Open
None	9/24/2019	14	35.2	18.6	0.1	46.1	-3.6	0.021		69	10% Open
None	10/24/2019	14	Flare was down due to UV Sensor Failure								
None	11/19/2019	14	53.3	19.9	0.2	26.6	-3.2	-0.036		44	10% Open
None	12/24/2019	14	34.4	17.6	0.5	47.0	-3.7	-0.030		54	10% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
E	1/18/2019	15	53.5	24.0	1.8	39.2	-4.0				85% Open
E	2/1/2019	15	Flare not operating								
E	3/1/2019	15	Flare unpowered								
E	4/1/2019	15	Flare unpowered								
E	5/28/2019	15	61.4	25.4	0.5	2.0	-3.5				85% Open
E	6/11/2019	15	32.4	23.2	0.5	38.5	-3.6				85% Open
E	7/19/2019	15									85% Open
E	8/21/2019	15	75.1	22.5	0.0	2.4	-3.7	-		-	85% Open
E	9/24/2019	15	74.6	23.6	0.0	1.8	-4.0	-		-	85% Open
E	10/24/2019	15	Flare was down due to UV Sensor Failure								
E	11/19/2019	15	75.3	23.9	0.1	0.7	-4.2	4.256		48	85% Open
E	12/24/2019	15	56.6	21.8	0.1	21.5	-4.3	4.928		42	85% Open
E	1/18/2019	16	46.3	18.9	7.2	60.5	-4.2	0.081	25.0	41	100% Open
E	2/1/2019	16	Flare not operating								
E	3/1/2019	16	Flare unpowered								
E	4/1/2019	16	Flare unpowered								
E	5/28/2019	16	51.6	12.6	5.3	39.1	-3.6	0.071		64	100% Open
E	6/11/2019	16	44.9	15.0	6.2	34.2	-3.8	0.063		64	100% Open
E	7/19/2019	16	51.3	13.2	4.5	33.7	-4.1	0.058		91	100% Open
E	8/21/2019	16	76.2	13.5	0.1	10.2	-4.4	0.003		81	100% Open
E	9/24/2019	16	78.2	14.1	0.0	7.7	-4.1	0.011		72	100% Open
E	10/24/2019	16	Flare was down due to UV Sensor Failure								
E	11/19/2019	16	77.3	15.0	0.0	7.7	-4.1	0.146		44	100% Open
E	12/24/2019	16	50.8	14.7	1.0	33.6	-4.3	-0.028		47	100% Open
E	1/18/2019	17	24.6	5.5	5.8	60.5	-4.2	0.063	22.1	28	50 % Open
E	2/1/2019	17	Flare not operating								
E	3/1/2019	17	Flare unpowered								
E	4/1/2019	17	Flare unpowered								
E	5/28/2019	17	23.3	4.0	6.4	59.2	-5.5	0.081		62	50 % Open
E	6/11/2019	17	38.5	4.5	6.2	52.1	-3.7	0.057		68	50 % Open
E	7/19/2019	17	42.5	5.4	4.8	51.3	-3.2	0.061		89	50 % Open
E	8/21/2019	17	29.7	4.5	12.3	53.5	-4.5	0.020		81	50 % Open
E	9/24/2019	17	18.7	3.0	13.8	64.5	-4.1	0.024		76	50 % Open
E	10/24/2019	17	Flare was down due to UV Sensor Failure								
E	11/19/2019	17	21.1	3.8	13.0	62.1	-4.1	-0.018		43	50 % Open
E	12/24/2019	17	20.9	3.7	12.0	63.4	-3.6	0.004		47	50 % Open
E	1/18/2019	18	68.3	14.4	2.8	13.5	-4.6				100% Open
E	2/1/2019	18	Flare not operating								
E	3/1/2019	18	Flare unpowered								
E	4/1/2019	18	Flare unpowered								
E	5/28/2019	18	73.5	12.6	1.3	15.7	-4.5				100% Open
E	6/11/2019	18	62.5	13.6	0.5	24.6	-3.9				100% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
E	7/19/2019	18	60.2	12.5	0.2	23.6	-4.2				100% Open
E	8/21/2019	18	81.9	12.7	0.6	4.8	-4.4	-		-	100% Open
E	9/24/2019	18	80.2	12.9	1.0	5.9	-4.2	-		-	100% Open
E	10/24/2019	18	Flare was down due to UV Sensor Failure								
E	11/19/2019	18	79.5	12.9	1.6	6.0	-4.1	4.198		43	100% Open
E	12/24/2019	18	51.0	10.6	4.1	34.2	-4.5	3.742		42	100% Open
F	1/18/2019	19	65.2	28.9	7.7	0.2	-3.6				50% Open
F	2/1/2019	19	Flare not operating								
F	3/1/2019	19	Flare unpowered								
F	4/1/2019	19	Flare unpowered								
F	5/28/2019	19	68.7	30.2	0.4	0.0	-3.9				50% Open
F	6/11/2019	19	68.4	20.6	6.5	1.2	-4.1				50% Open
F	7/19/2019	19	57.5	16.8	4.5	1.1	-3.9				50% Open
F	8/21/2019	19	76.9	23.0	0.0	0.1	-3.7	-		-	50% Open
F	9/24/2019	19	75.1	24.8	0.0	0.1	-3.6	-		-	50% Open
F	10/24/2019	19	Flare was down due to UV Sensor Failure								
F	11/19/2019	19	74.5	25.5	0.0	0.1	-3.5	3.499		44	50% Open
F	12/24/2019	19	70.5	24.1	0.9	4.5	-3.4	3.948		53	50% Open
F	1/18/2019	20	61.7	30.7	6.2	0.1	-3.6				50% Open
F	2/1/2019	20	Flare not operating								
F	3/1/2019	20	Flare unpowered								
F	4/1/2019	20	Flare unpowered								
F	5/28/2019	20	65.6	32.6	5.5	0.1	5.3				50% Open
F	6/11/2019	20	62.2	20.0	5.4	14.3	-4.1				50% Open
F	7/19/2019	20	58.7	17.7	4.5	14.7	-3.2				50% Open
F	8/21/2019	20	73.0	24.7	0.0	2.3	-3.7	-		-	50% Open
F	9/24/2019	20	68.0	26.1	0.0	5.9	-3.7	-		-	50% Open
F	10/24/2019	20	Flare was down due to UV Sensor Failure								
F	11/19/2019	20	72.7	27.2	0.0	0.1	-3.5	3.513		44	50% Open
F	12/24/2019	20	74.0	25.5	0.4	0.1	-3.7	0.202		44	50% Open
F	1/18/2019	21	80.3	19.0	0.4	0.2	-3.6	0.084	25.5		100% Open
F	2/1/2019	21	Flare not operating								
F	3/1/2019	21	Flare unpowered								
F	4/1/2019	21	Flare unpowered								
F	5/28/2019	21	71.4	23.5	0.0	0.0	-4.7	0.114		59	100% Open
F	6/11/2019	21	78.2	17.4	0.0	0.0	-3.7	0.064			100% Open
F	7/19/2019	21	66.5	15.7	1.3	3.2	-4.1	0.058			100% Open
F	8/21/2019	21	68.0	11.2	2.7	18.1	-3.8	0.008		81	100% Open
F	9/24/2019	21	66.5	11.3	3.5	18.7	-3.6	0.023		77	100% Open
F	10/24/2019	21	Flare was down due to UV Sensor Failure								
F	11/19/2019	21	57.9	10.5	5.4	26.2	-3.3	-0.018		45	100% Open
F	12/24/2019	21	81.3	14.7	1.5	2.5	-3.6	-0.010		49	100% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
F	1/18/2019	22	59.1	26.4	0.9	13.8	-0.2	0.061	21.7	38	5% Open
F	2/1/2019	22	Flare not operating								
F	3/1/2019	22	Flare unpowered								
F	4/1/2019	22	Flare unpowered								
F	5/28/2019	22	66.0	24.6	1.0	12.5	-0.5	0.042		64	5% Open
F	6/11/2019	22	23.6	16.5	16.9	51.6	-0.5	0.074		61	5% Open
F	7/19/2019	22									5% Open
F	8/21/2019	22	51.5	20.8	0.4	27.3	-0.4	0.010		82	5% Open
F	9/24/2019	22	45.1	22.1	0.0	32.8	-0.5	0.010		72	5% Open
F	10/24/2019	22	Flare was down due to UV Sensor Failure								
F	11/19/2019	22	53.5	23.6	0.3	22.6	-0.4	0.009		50	5% Open
F	12/24/2019	22	53.6	21.3	1.3	23.8	-0.3	0.009		46	5% Open
F	1/18/2019	23	66.8	27.7	0.5	0.1	-0.5				5% Open
F	2/1/2019	23	Flare not operating								
F	3/1/2019	23	Flare unpowered								
F	4/1/2019	23	Flare unpowered								
F	5/28/2019	23	61.1	24.5	0.3	0.4	-0.8				5% Open
F	6/11/2019	23	19.3	21.9	15.2	45.2	-0.4				5% Open
F	7/19/2019	23									5% Open
F	8/21/2019	23	72.0	21.3	0.0	6.7	-0.5	-		-	5% Open
F	9/24/2019	23	67.2	22.3	0.0	10.5	-1.1	-		-	5% Open
F	10/24/2019	23	Flare was down due to UV Sensor Failure								
F	11/19/2019	23	71.9	23.4	0.0	4.7	-0.6	0.693		44	5% Open
F	12/24/2019	23	53.9	19.9	0.7	25.5	2.4	0.845		42	5% Open
G	1/18/2019	24	64.7	19.3	13.1	0.2	-3.7	0.095	27.1	28	100% Open
G	2/1/2019	24	Flare not operating								
G	3/1/2019	24	Flare unpowered								
G	4/1/2019	24	Flare unpowered								
G	5/28/2019	24	61.5	14.5	11.5	0.5	-2.5	0.143		64	100% Open
G	6/11/2019	24	66.2	16.5	11.2	0.5	.2.9	0.135		61	100% Open
G	7/19/2019	24	59.4	17.9	15.3	0.4	-3.2	0.097		88	100% Open
G	8/21/2019	24	69.6	14.6	2.4	13.4	-4.3	0.044		84	100% Open
G	9/24/2019	24	71.5	15.4	2.7	10.4	-4.0	0.026		76	100% Open
G	10/24/2019	24	Flare was down due to UV Sensor Failure								
G	11/19/2019	24	51.5	11.9	6.2	30.4	-3.4	-0.148		44	100% Open
G	12/24/2019	24	39.6	10.0	5.8	44.6	-3.8	0.112		50	100% Open
G	1/18/2019	25	63.1	9.3	4.5	17.8	-4.1	0.093	26.8		10% Open
G	2/1/2019	25	Flare not operating								
G	3/1/2019	25	Flare unpowered								
G	4/1/2019	25	Flare unpowered								
G	5/28/2019	25	72.3	5.1	4.7	18.5	-5.1	0.056		60	10% Open
G	6/11/2019	25	60.1	10.1	5.2	21.5	-3.6	0.107			10% Open

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2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
G	7/19/2019	25									10% Open
G	8/21/2019	25	70.0	16.4	0.7	12.9	-4.1	0.013		79	10% Open
G	9/24/2019	25	63.5	1.5	0.5	18.5	-4.0	0.019		71	10% Open
G	10/24/2019	25	Flare was down due to UV Sensor Failure								
G	11/19/2019	25	71.8	17.9	0.3	10.0	-3.3	0.111		49	10% Open
G	12/24/2019	25	65.4	17.8	1.2	15.6	-3.9	0.002		45	10% Open
G	1/18/2019	26	66.1	23.0	4.4	6.1	-3.8				35% Open
G	2/1/2019	26	Flare not operating								
G	3/1/2019	26	Flare unpowered								
G	4/1/2019	26	Flare unpowered								
G	5/28/2019	26	65.2	20.1	4.5	7.9	-2.1				35% Open
G	6/11/2019	26	62.7	20.5	5.8	13.7	-3.2				35% Open
G	7/19/2019	26									35% Open
G	8/21/2019	26	75.9	20.5	0.0	3.6	-3.8	-		-	35% Open
G	9/24/2019	26	75.4	22.2	0.0	2.4	-6.8	-		85	35% Open
G	10/24/2019	26	Flare was down due to UV Sensor Failure								
G	11/19/2019	26	76.8	22.3	0.1	0.8	-3.3	3.384		43	35% Open
G	12/24/2019	26	64.1	19.6	1.0	15.3	-3.7	4.039		44	35% Open
G	1/18/2019	27	10.3	0.8	2.3	84.8	-0.1				0% Open
G	2/1/2019	27	Flare not operating								
G	3/1/2019	27	Flare unpowered								
G	4/1/2019	27	Flare unpowered								
G	5/28/2019	27	17.5	0.5	3.1	78.9	-0.1				0% Open
G	6/11/2019	27	7.4	0.5	12.6	80.6	-0.2				0% Open
G	7/19/2019	27									0% Open
G	8/21/2019	27	0.8	0.2	16.9	82.1	-0.3	-		-	0% Open
G	9/24/2019	27	0.6	0.1	17.1	82.2	-0.6	-		-	0% Open
G	10/24/2019	27	Flare was down due to UV Sensor Failure								
G	11/19/2019	27	11.0	5.5	13.6	69.9	-0.1	0.698		45	0% Open
G	12/24/2019	27	0.5	0.1	17.9	81.5	-0.3	0.803		37	0% Open
G	1/18/2019	28	59.6	22.8	5.4	11.2	-0.9	0.045	18.6	35	40% Open
G	2/1/2019	28	Flare not operating								
G	3/1/2019	28	Flare unpowered								
G	4/1/2019	28	Flare unpowered								
G	5/28/2019	28	65.2	23.6	3.0	16.7	-0.5	0.034		67	40% Open
G	6/11/2019	28	61.3	22.2	6.7	11.8	-0.5	0.031		62	40% Open
G	7/19/2019	28									40% Open
G	8/21/2019	28	63.9	19.3	0.1	16.7	-0.9	0.033		80	40% Open
G	9/24/2019	28	64.2	20.1	0.1	15.6	-1.2	0.017		71	40% Open
G	10/24/2019	28	Flare was down due to UV Sensor Failure								
G	11/19/2019	28	68.2	20.1	0.4	11.3	-1.0	0.005		49	40% Open
G	12/24/2019	28	66.6	18.5	2.3	12.6	-0.9	-0.011		48	40% Open

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2019 Extraction Well Data Summary
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Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
G	1/18/2019	29	63.3	9.2	3.8	22.1	-4.1	0.085	25.6	37	100% Open
G	2/1/2019	29	Flare not operating								
G	3/1/2019	29	Flare unpowered								
G	4/1/2019	29	Flare unpowered								
G	5/28/2019	29	65.7	11.7	4.1	21.4	-3.5	0.071		62	100% Open
G	6/11/2019	29	64.8	10.6	5.0	20.4	-3.8	0.062		64	100% Open
G	7/19/2019	29									100% Open
G	8/21/2019	29	66.1	5.8	4.7	23.4	-4.0	0.084		81	100% Open
G	9/24/2019	29	82.4	7.2	2.7	7.7	-6.3	0.030		77	100% Open
G	10/24/2019	29	Flare was down due to UV Sensor Failure								
G	11/19/2019	29	70.4	6.8	4.1	18.9	-3.2	-0.062		45	100% Open
G	12/24/2019	29	71.5	9.0	3.0	16.5	-3.9	-0.009		45	100% Open
H	1/18/2019	30	31.3	18.2	1.2	29.5	-4.3	0.850	25.6		100% Open
H	2/1/2019	30	Flare not operating								
H	3/1/2019	30	Flare unpowered								
H	4/1/2019	30	Flare unpowered								
H	5/28/2019	30	42.6	19.5	0.4	32.6	-3.5	0.054		63	100% Open
H	6/11/2019	30	37.9	17.5	3.6	38.5	-4.5	0.052			100% Open
H	7/19/2019	30									100% Open
H	8/21/2019	30	76.1	14.5	0.0	9.4	-4.4	0.023		79	100% Open
H	9/24/2019	30	76.5	14.7	0.0	8.8	-3.9	0.030		77	100% Open
H	10/24/2019	30	Flare was down due to UV Sensor Failure								
H	11/19/2019	30	74.2	16.3	0.0	9.5	-3.6	-0.009		51	100% Open
H	12/24/2019	30	52.7	16.0	0.9	30.4	-4.0	0.030		46	100% Open
H	1/18/2019	31	62.0	23.9	0.4	11.6	-0.1	0.042	18.0	39	10% Open
H	2/1/2019	31	Flare not operating								
H	3/1/2019	31	Flare unpowered								
H	4/1/2019	31	Flare unpowered								
H	5/28/2019	31	71.5	21.5	0.4	13.5	-3.0	0.063		66	10% Open
H	6/11/2019	31	64.3	26.5	0.5	12.9	-0.1	0.032		66	10% Open
H	7/19/2019	31									10% Open
H	8/21/2019	31	57.8	22.6	0.0	19.6	3.6	-		-	10% Open
H	9/24/2019	31	57.0	22.8	0.1	20.1	-4.3	-		-	10% Open
H	10/24/2019	31	Flare was down due to UV Sensor Failure								
H	11/19/2019	31	65.4	24.3	0.6	9.7	-3.7	3.752		43	10% Open
H	12/24/2019	31	63.2	81.7	0.0	15.1	-4.0	4.368		41	10% Open
H	1/18/2019	32	37.3	13.0	0.7	6.0	-3.6	0.054	20.4		100% Open
H	2/1/2019	32	Flare not operating								
H	3/1/2019	32	Flare unpowered								
H	4/1/2019	32	Flare unpowered								
H	5/28/2019	32	43.2	14.6	0.5	7.5	-4.5	0.043			100% Open
H	6/11/2019	32	41.6	15.4	7.0	42.5	-3.3	0.101			100% Open

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Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
H	7/19/2019	32									100% Open
H	8/21/2019	32	83.3	10.2	0.5	6.0	-4.1	0.007		80	100% Open
H	9/24/2019	32	85.2	10.5	0.0	4.3	-6.6	0.032		74	100% Open
H	10/24/2019	32	Flare was down due to UV Sensor Failure								
H	11/19/2019	32	81.7	11.1	0.5	6.7	-3.5	-0.034		48	100% Open
H	12/24/2019	32	69.3	12.2	1.8	16.7	-4.7	0.018		49	100% Open
H	1/18/2019	33	58.6	23.3	8.2	9.7	-4.6				20% Open
H	2/1/2019	33	Flare not operating								
H	3/1/2019	33	Flare unpowered								
H	4/1/2019	33	Flare unpowered								
H	5/28/2019	33	61.5	17.5	0.0	27.9	-5.1				20% Open
H	6/11/2019	33	67.2	15.9	6.7	10.8	-5.1				20% Open
H	7/19/2019	33									20% Open
H	8/21/2019	33	56.5	19.9	0.5	23.1	-0.5	0.030		77	20% Open
H	9/24/2019	33	59.3	20.1	0.0	20.6	-0.7	0.030		68	20% Open
H	10/24/2019	33	Flare was down due to UV Sensor Failure								
H	11/19/2019	33	67.7	20.9	0.4	11.0	-0.7	-0.123		50	25% Open
H	12/24/2019	33	67.2	20.0	0.4	12.4	-0.6	0.004		48	25% Open
H	1/18/2019	34	66.1	28.1	2.0	1.7	-4.1				100% Open
H	2/1/2019	34	Flare not operating								
H	3/1/2019	34	Flare unpowered								
H	4/1/2019	34	Flare unpowered								
H	5/28/2019	34	62.1	24.5	1.4	3.2	-4.5				100% Open
H	6/11/2019	34	54.7	26.2	12.5	8.7	-4.5				100% Open
H	7/19/2019	34									100% Open
H	8/21/2019	34	68.8	27.4	0.0	3.8	-4.8	-		-	100% Open
H	9/24/2019	34	67.3	27.7	0.0	5.0	-4.2	-		-	100% Open
H	10/24/2019	34	Flare was down due to UV Sensor Failure								
H	11/19/2019	34	70.6	29.3	0.0	0.1	-3.9	3.891		46	100% Open
H	12/24/2019	34	58.4	24.9	0.0	16.6	-4.6	4.039		46	100% Open
H	1/18/2019	35	36.3	18.5	2.9	47.8	-0.2	0.045	18.6	33	0% Open
H	2/1/2019	35	Flare not operating								
H	3/1/2019	35	Flare unpowered								
H	4/1/2019	35	Flare unpowered								
H	5/28/2019	35	41.5	19.5	3.3	43.6	-0.5	0.036		61	0% Open
H	6/11/2019	35	41.0	17.5	3.8	39.5	-0.1	0.039		67	0% Open
H	7/19/2019	35									0% Open
H	8/21/2019	35	60.5	23.5	0.1	15.9	0.0	-0.016		94	0% Open
H	9/24/2019	35	33.8	12.7	7.7	45.8	-0.2	0.026		73	0% Open
H	10/24/2019	35	Flare was down due to UV Sensor Failure								
H	11/19/2019	35	65.7	23.8	1.4	9.1	-0.3	-0.023		45	0% Open
H	12/24/2019	35	11.2	5.3	12.2	71.3	0.0	-0.006		56	0% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
I	1/18/2019	36	57.3	19.3	12.6	12.2	-4.2	0.027	14.4	40	100% Open
I	2/1/2019	36	Flare not operating								
I	3/1/2019	36	Flare unpowered								
I	4/1/2019	36	Flare unpowered								
I	5/28/2019	36	62.6	16.7	8.6	15.4	-3.5	0.035		67	100% Open
I	6/11/2019	36	55.4	16.5	15.8	14.7	-3.7	0.037		64	100% Open
I	7/19/2019	36									100% Open
I	8/21/2019	36	54.4	16.5	0.7	28.4	-4.6	0.009		84	100% Open
I	9/24/2019	36	58.7	16.9	0.9	23.5	-4.1	0.057		71	100% Open
I	10/24/2019	36	Flare was down due to UV Sensor Failure								
I	11/19/2019	36	68.9	18.6	1.5	11.0	-4.5	-0.033		53	100% Open
I	12/24/2019	36	53.7	17.8	0.1	28.4	-4.4	-0.036		51	100% Open
I	1/18/2019	37	0.6	0.3	13.7	84.8	-0.3				5% Open
I	2/1/2019	37	Flare not operating								
I	3/1/2019	37	Flare unpowered								
I	4/1/2019	37	Flare unpowered								
I	5/28/2019	37	4.5	0.0	17.8	79.6	-0.2				5% Open
I	6/11/2019	37	5.2	1.1	14.8	79.5	-0.2				5% Open
I	7/19/2019	37									5% Open
I	8/21/2019	37	0.7	0.2	16.5	82.6	0.0	-		130	5% Open
I	9/24/2019	37	0.7	0.2	16.0	83.1	-0.1	-		-	5% Open
I	10/24/2019	37	Flare was down due to UV Sensor Failure								
I	11/19/2019	37	0.6	0.2	16.4	82.8	-0.6	0.524		48	5% Open
I	12/24/2019	37	0.3	0.0	17.9	81.8	-0.1	1.491		44	5% Open
I	1/18/2019	38	0.4	0.3	17.8	81.7	-0.1				5% Open
I	2/1/2019	38	Flare not operating								
I	3/1/2019	38	Flare unpowered								
I	4/1/2019	38	Flare unpowered								
I	5/28/2019	38	3.6	1.3	16.9	81.5	-0.1				5% Open
I	6/11/2019	38	1.3	3.2	18.1	80.9	-0.2				5% Open
I	7/19/2019	38									5% Open
I	8/21/2019	38	59.3	21.4	0.1	18.7	0.0	-		-	5% Open
I	9/24/2019	38	29.3	9.5	8.9	52.3	0.0	-		-	5% Open
I	10/24/2019	38	Flare was down due to UV Sensor Failure								
I	11/19/2019	38	0.3	0.1	17.8	81.8	-0.5	1.487		48	5% Open
I	12/24/2019	38	0.2	0.0	18.1	81.7	0.0	-0.325		47	5% Open
I	1/18/2019	39	1.2	0.3	13.9	84.5	-0.2				25% Open
I	2/1/2019	39	Flare not operating								
I	3/1/2019	39	Flare unpowered								
I	4/1/2019	39	Flare unpowered								
I	5/28/2019	39	3.5	0.0	18.9	81.4	-0.1				25% Open
I	6/11/2019	39	3.1	3.2	12.6	81.5	-0.2				25% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
I	7/19/2019	39									25% Open
I	8/21/2019	39	52.6	18.3	0.8	28.3	0.0	-		-	25% Open
I	9/24/2019	39	44.3	15.0	4.4	36.3	0.0	-		-	25% Open
I	10/24/2019	39	Flare was down due to UV Sensor Failure								
I	11/19/2019	39	0.7	0.5	15.6	83.4	-0.5	0.522		44	25% Open
I	12/24/2019	39	0.1	0.0	18.2	81.7	0.0	0.346		54	25% Open
I	1/18/2019	40	0.3	0.2	18.0	81.7	-0.1				100% Open
I	2/1/2019	40	Flare not operating								
I	3/1/2019	40	Flare unpowered								
I	4/1/2019	40	Flare unpowered								
I	5/28/2019	40	1.1	0.5	17.6	80.3	-0.1				100% Open
I	6/11/2019	40	1.1	3.2	17.5	80.6	-0.1				100% Open
I	7/19/2019	40									100% Open
I	8/21/2019	40	68.5	19.3	0.0	12.2	0.0	-		120	100% Open
I	9/24/2019	40	71.2	20.1	0.0	8.7	0.0	-		-	100% Open
I	10/24/2019	40	Flare was down due to UV Sensor Failure								
I	11/19/2019	40	0.1	0.0	18.0	81.9	-0.5	0.505		48	100% Open
I	12/24/2019	40	16.4	5.4	14.5	63.7	-0.1	0.512		49	100% Open
I	1/18/2019	41									50% Open
I	2/1/2019	41	Flare not operating								
I	3/1/2019	41	Flare unpowered								
I	4/1/2019	41	Flare unpowered								
I	5/28/2019	41	23.6	14.5	7.8	61.4	2.6				50% Open
I	6/11/2019	41	26.5	15.5	16.2	49.7	-2.6				50% Open
I	7/19/2019	41									50% Open
I	8/21/2019	41	62.7	17.8	0.0	19.5	0.0	-		-	50% Open
I	9/24/2019	41	4.0	2.0	15.9	78.1	0.0	-		-	50% Open
I	10/24/2019	41	Flare was down due to UV Sensor Failure								
I	11/19/2019	41	0.2	0.0	17.8	82.0	0.0	0.640		77	50% Open
I	12/24/2019	41	0.3	0.0	18.0	81.7	-0.1	0.519		44	50% Open
I	1/18/2019	42									50% Open
I	2/1/2019	42	Flare not operating								
I	3/1/2019	42	Flare unpowered								
I	4/1/2019	42	Flare unpowered								
I	5/28/2019	42	34.7	12.5	15.6	48.5	-2.5				50% Open
I	6/11/2019	42	21.0	13.4	17.6	52.5	-2.4				50% Open
I	7/19/2019	42									50% Open
I	8/21/2019	42	44.6	20.4	0.0	35.0	0.0	-		-	50% Open
I	9/24/2019	42	50.3	21.6	0.0	28.1	-0.1	-		-	50% Open
I	10/24/2019	42	Flare was down due to UV Sensor Failure								
I	11/19/2019	42	0.5	0.3	17.0	82.2	0.0	0.619		48	50% Open
I	12/24/2019	42	0.8	0.3	16.3	82.6	-0.1	0.517		42	50% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
J	1/18/2019	43	59.5	21.9	9.7	8.5	-3.1	0.039	17.4	55	100% Open
J	2/1/2019	43	Flare unpowered								
J	3/1/2019	43	Flare unpowered								
J	4/1/2019	43	Flare unpowered								
J	5/28/2019	43	56.3	15.7	12.4	18.6	-2.5	0.011		62	100% Open
J	6/11/2019	43	62.3	18.0	6.7	14.3	-2.5	0.041		71	100% Open
J	7/19/2019	43									100% Open
J	8/21/2019	43	66.5	18.3	0.1	15.1	-3.0	0.168		81	100% Open
J	9/24/2019	43	64.6	18.0	0.9	16.5	-3.5	0.116		75	100% Open
J	10/24/2019	43	Flare was down due to UV Sensor Failure								
J	11/19/2019	43	72.0	20.5	0.9	6.6	-2.6	-0.035		63	100% Open
J	12/24/2019	43	68.7	20.5	0.2	10.6	-3.1	0.016		59	100% Open
J	1/18/2019	44									25% Open
J	2/1/2019	44	Flare unpowered								
J	3/1/2019	44	Flare unpowered								
J	4/1/2019	44	Flare unpowered								
J	5/28/2019	44	31.5	24.5	14.6	30.0	-2.1				25% Open
J	6/11/2019	44	26.1	6.5	15.1	42.8	-2.6				25% Open
J	7/19/2019	44									25% Open
J	8/21/2019	44	65.2	19.5	0.0	15.3	-1.0	-		-	25% Open
J	9/24/2019	44	62.4	20.8	0.0	16.8	-4.2	-		-	25% Open
J	10/24/2019	44	Flare was down due to UV Sensor Failure								
J	11/19/2019	44	66.3	23.0	0.2	10.5	-1.8	1.425		45	25% Open
J	12/24/2019	44	61.0	21.4	0.1	17.5	-1.2	1.513		48	25% Open
J	1/18/2019	45									5% Open
J	2/1/2019	45	Flare unpowered								
J	3/1/2019	45	Flare unpowered								
J	4/1/2019	45	Flare unpowered								
J	5/28/2019	45	12.5	16.5	14.1	61.5					5% Open
J	6/11/2019	45	27.5	7.8	14.6	41.5	-2.7				5% Open
J	7/19/2019	45									5% Open
J	8/21/2019	45	55.0	20.0	0.0	25.0	0.0	-		80	5% Open
J	9/24/2019	45	47.4	19.9	0.0	32.7	-0.3	-		75	5% Open
J	10/24/2019	45	Flare was down due to UV Sensor Failure								
J	11/19/2019	45	55.4	21.8	0.0	22.8	-0.7	0.664		48	5% Open
J	12/24/2019	45	47.0	20.7	0.0	32.3	-0.2	0.574		48	5% Open
J	1/18/2019	46	63.3	28.8	5.7	0.1	-3.3	0.029	15.0	29	10% Open
J	2/1/2019	46	Flare unpowered								
J	3/1/2019	46	Flare unpowered								
J	4/1/2019	46	Flare unpowered								
J	5/28/2019	46	53.5	14.7	7.0	26.9	-2.1	0.031		64	10% Open
J	6/11/2019	46	61.1	21.5	3.1	0.0	-3.1	0.019		67	10% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
J	7/19/2019	46	60.4	20.4	2.2	1.4	-4.3	0.023		89	10% Open
J	8/21/2019	46	67.1	24.4	0.0	8.4	-4.1	0.039		83	10% Open
J	9/24/2019	46	67.2	25.9	0.0	6.9	-7.5	0.025		72	10% Open
J	10/24/2019	46	Flare was down due to UV Sensor Failure								
J	11/19/2019	46	69.5	27.4	0.0	3.1	-4.2	-0.050		47	10% Open
J	12/24/2019	46	64.1	25.7	0.0	10.2	-4.2	-0.013		50	10% Open
J	1/18/2019	47	49.9	24.9	1.1	24.2	-2.9	0.072	23.6	29	10% Open
J	2/1/2019	47	Flare unpowered								
J	3/1/2019	47	Flare unpowered								
J	4/1/2019	47	Flare unpowered								
J	5/28/2019	47	51.0	20.5	3.6	28.7	-3.2	0.146		66	10% Open
J	6/11/2019	47	51.8	14.8	2.0	32.7	-3.2	0.037		66	10% Open
J	7/19/2019	47	55.7	16.5	1.4	30.5	-4.4	0.041		90	10% Open
J	8/21/2019	47	38.7	24.9	0.0	36.4	-3.2	0.003		81	10% Open
J	9/24/2019	47	51.4	27.3	0.0	21.3	-3.0	0.028		71	10% Open
J	10/24/2019	47	Flare was down due to UV Sensor Failure								
J	11/19/2019	47	47.3	26.3	0.0	25.9	-3.5	-0.038		48	10% Open
J	12/24/2019	47	38.6	22.0	1.3	38.1	-2.9	-0.023		48	10% Open
L	1/18/2019	48	53.2	22.2	12.3	13.0	-12.7	0.045	18.6	30	10% Open
L	2/1/2019	48	Flare unpowered								
L	3/1/2019	48	Flare unpowered								
L	4/1/2019	48	Flare unpowered								
L	5/28/2019	48	49.6	20.5	8.2	14.7	-5.6	0.072		62	10% Open
L	6/11/2019	48	61.5	18.7	8.8	11.1	-4.8	0.064		65	10% Open
L	7/19/2019	48	62.6	17.6	7.7	15.4	-3.2	0.058		91	10% Open
L	8/21/2019	48	63.3	21.1	0.3	15.3	-0.7	0.009		87	10% Open
L	9/24/2019	48	68.5	21.5	0.4	9.6	-2.0	0.018		73	10% Open
L	10/24/2019	48	Flare was down due to UV Sensor Failure								
L	11/19/2019	48	73.0	21.7	0.3	5.0	-3.2	-0.030		48	15% Open
L	12/24/2019	48	46.3	18.5	10.0	25.2	-2.5	-0.020		52	15% Open
L	1/18/2019	49	66.3	32.1	0.9	0.6	-1.3	0.061	21.7	34	5% Open
L	2/1/2019	49	Flare unpowered								
L	3/1/2019	49	Flare unpowered								
L	4/1/2019	49	Flare unpowered								
L	5/28/2019	49	68.1	24.8	1.4	7.5	-1.5	0.055		62	5% Open
L	6/11/2019	49	64.2	33.9	0.8	0.9	-2.7	0.056		66	5% Open
L	7/19/2019	49	63.1	25.7	0.0	0.3	-3.5	0.041		92	5% Open
L	8/21/2019	49	44.3	28.0	0.0	27.7	-0.9	0.015		77	5% Open
L	9/24/2019	49	56.7	27.9	0.3	15.1	-1.1	0.021		68	5% Open
L	10/24/2019	49	Flare was down due to UV Sensor Failure								
L	11/19/2019	49	68.9	30.2	0.2	0.7	-2.1	-0.029		51	15% Open
L	12/24/2019	49	59.3	27.5	3.0	12.9	-1.6	-0.013		53	15% Open

Appendix C Well Balancing
2019 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position
L	1/18/2019	50	71.9	24.6	0.8	1.4	-2.9	0.074	23.9	31	100% Open
L	2/1/2019	50	Flare unpowered								
L	3/1/2019	50	Flare unpowered								
L	4/1/2019	50	Flare unpowered								
L	5/28/2019	50	62.5	24.1	0.7	3.2	-3.2	0.054		66	100% Open
L	6/11/2019	50	56.9	22.7	1.5	3.2	-2.5	0.071		64	100% Open
L	7/19/2019	50	51.3	18.7	2.1	14.0	-3.3	0.062		88	100% Open
L	8/21/2019	50	75.9	24.0	0.0	0.1	-0.7	0.011		86	100% Open
L	9/24/2019	50	75.9	23.0	0.0	1.1	-5.3	0.023		74	100% Open
L	10/24/2019	50	Flare was down due to UV Sensor Failure								
L	11/19/2019	50	73.5	24.6	0.8	1.1	-2.1	-0.044		46	100% Open
L	12/24/2019	50	66.2	21.8	0.5	11.6	-2.4	-0.017		53	100% Open
L	1/18/2019	51	36.3	22.0	4.4	17.1	-2.6	0.015	10.7	55	100% Open
L	2/1/2019	51	Flare unpowered								
L	3/1/2019	51	Flare unpowered								
L	4/1/2019	51	Flare unpowered								
L	5/28/2019	51	43.6	12.0	16.3	15.6	-3.3	0.034		61	100% Open
L	6/11/2019	51	35.4	20.6	10.2	32.8	-2.2	0.009		62	100% Open
L	7/19/2019	51	42.6	17.8	5.3	40.1	-3.3	0.034		91	100% Open
L	8/21/2019	51	74.9	18.0	0.0	7.1	-0.6	0.036		77	100% Open
L	9/24/2019	51	74.4	17.5	0.3	7.8	-1.6	0.051		73	100% Open
L	10/24/2019	51	Flare was down due to UV Sensor Failure								
L	11/19/2019	51	75.2	18.8	0.3	5.7	-2.8	-0.008		63	100% Open
L	12/24/2019	51	53.8	18.6	0.3	27.3	-2.2	0.013		60	100% Open
L	1/18/2019	52	46.7	21.0	16.6	16.0	-0.9	0.057	21.0	28	100% Open
L	2/1/2019	52	Flare unpowered								
L	3/1/2019	52	Flare unpowered								
L	4/1/2019	52	Flare unpowered								
L	5/28/2019	52	42.6	15.3	18.2	32.5	-0.5	0.032		66	100% Open
L	6/11/2019	52	47.6	18.7	14.1	15.2	-0.5	0.026		67	100% Open
L	7/19/2019	52	52.4	17.5	13.6	14.3	-0.9	0.019		89	100% Open
L	8/21/2019	52	72.2	24.1	0.0	3.7	0.0	0.022		84	100% Open
L	9/24/2019	52	46.0	17.1	5.3	31.6	-0.7	0.043		74	100% Open
L	10/24/2019	52	Flare was down due to UV Sensor Failure								
L	11/19/2019	52	67.1	22.9	1.5	8.5	-1.3	-0.031		46	100% Open
L	12/24/2019	52	64.3	23.4	2.2	10.1	-0.5	-0.012		51	100% Open

D

Flare Data Sheets

Appendix D Flare Data
2019 Flare Data
Clarkstown Landfill, West Nyack, NY

Date	Time	CH4	CO2	O2	Balance	Comments
1/18/2019	1100	44.2	18.1	4.3	33.5	DL-5 120 gal
2/16/2019	NA	NA	NA	NA	NA	Flare not operating
3/15/2019	NA	NA	NA	NA	NA	Flare not powered
4/1/2019	NA	NA	NA	NA	NA	Flare not powered
5/31/2019	NA	NA	NA	NA	NA	Flare not operating
6/11/2019	830	45.8	15.3	2.2	36.4	DL-1 350 gal DL-5 100 gal
7/19/2019	750	44.7	16.3	3.5	35	DL-5 200 gal
8/20/2019	845	44.2	16.3	4	35.6	DL-1 133 gal DL-5 42 gal
9/24/2019	910	33.4	13.6	7.2	45.8	DL-1 15.6 gal DL-5 43.29 gal
10/24/2019	NA	NA	NA	NA	NA	UV Sensor broken, Flare not operating DL-1 pumped 0.5 gal; DL-5 was Dry, DL-10 pumped 45 gal
11/19/2019	1500	43.8	17.3	6.4	32.5	D-17 needs repair
12/24/2019	1315	41	16.3	5.7	37	DL-1 pumped 25.5 gallons, DL-5 pumped 81.1 gallons, DL-10 needs repair

E

Flare Log Sheets

Appendix E - Working Flare Log Sheet
2019 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302			**Panel Display**			
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Temperature	Flow	Total Flow (10^6 CF)	Comments
1/1/2019	800	Off	3283	10.1	1237	265	502	FF, restart
1/4/2019	1250	Off	3293	11.4	1346	314	502.1	FF, restart
1/7/2019	705	Off	3305				502.3	FF
1/9/2019	905	Off	3306	9.8	1275	243	502.3	Restart
1/14/2019	701	Off	3314	13.1	1033	366	502.4	FF, restart
1/21/2019	732	Off	3334				502.8	FF
1/23/2019	740	Off	3344	12.5	1215	330	502.8	Restart
1/25/2019	708	Off	3348				503	restart failed
1/28/2019	700	Off	3348	15.8	1018	305	503	restart
1/30/2019	710	Off	3358	10.7	479	308	503.2	FF, restart
2/1/2019	715	Off	3368				503.4	FF
2/4/2019	740	Off	3368	13	1178	387	503.4	
2/6/2019	755	Off	3378				503.5	FF
2/7/2019	738	Off	3378	10.5	983	265	503.5	Restart
2/11/2019	703	Off	3397	13.4	1124	383	503.8	FF, restart
2/13/2019	910	Off	3407	12	1111	345	504	FF, restart
2/15/2019	800	Off	3417	12.6	1093	350	504.2	FF, Restart
2/19/2019	700	Off	3426				504.4	FF
2/22/2019	730	Off	3434				504.5	FF
2/26/2019	800	Off	3434				504.5	FF
2/27/2019	800	Off	3434	11.5	1050	326	504.5	Restart
3/4/2019	750	Off	3461	11.9	1310	333	505	FF, restart
3/6/2019	720							PLC issues not connecting to control panel will trouble shoot
flare has been inoperable due to electircal service issues - Issues resolved and startup complete								
5/9/2019	740	Off	3504	11.6	1219	451	506	FF, restart
5/13/2019	700	Off	3543				506.5	FF, low flow, rest
5/14/2019	700	Off					506.5	Low flow
5/17/2019	705	Off						Low flow
5/28/2019	720	Off	15530	8.1	1306	232	506.5	restart; switched blowers to determine source of low flow
5/31/2019	700	Off	15544	7.8	1280	212	506.7	FF, restart
6/11/2019	700	Off	15558	9.5	1414	247	506.9	
6/17/2019	705	off	15572	8.4	1342	260	507.1	FF, restart

Appendix E - Working Flare Log Sheet
2019 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302			**Panel Display**			
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Temperature	Flow	Total Flow (10^6 CF)	Comments
6/24/2019	808	Off	15586	7.4	1165	195	507.3	FF, Low flare shut down after 20 minutes
7/1/2019	1030	Off	15587	7.8	1358	217	507.3	Restart
7/12/2019	800	Off	15593	7.7	1430	247	507.4	Low flow; switch to blower 301. 302 pulling low amps and no flow.
7/20/2019	1734	on	3578	8	1431	261	507.9	running
7/25/2019	2051	off	3596				508.2	FF will not restart
7/26/2019	1014	off	3596	8.2	847	209	508.2	FF,restarted
7/29/2019	637	off	3607				508.3	FF will not restart, having issues monitoring will try again at offcie
7/29/2019	854	on	3609	8.2	1354	258	508.3	running
8/1/2019	759	off	3621	9.1	1281	278	508.5	FF, restarted
8/6/2019	815	off	3634	8.7	1151	274	508.7	FF, restarted
8/7/2019	801	on	3648	8.4	1194	269	508.9	running
8/9/2019	827	off	3675	8.9	736	282	509.4	FF, restarted
8/12/2019	800	off	3687	9.7	1008	305	509.1	FF, restarted
8/14/2019	610	off	3714				510	no alarms
8/15/2019	1523	off	3714	8.8	868	297	510	FF, restarted
8/16/2019	843	off	3720	9.2	926	307	510.1	FF, restarted
8/21/2019	829	off	3732	9.4	1149	305	510.3	FF, restarted
8/23/2019	830	off	3758				510.8	FF will not restart, raining
8/26/2019	845	off	3759	9.4	1312	304	510.8	FF, restarted
8/28/2019	745	on	3785	9.2	1133	320	511.3	running
8/30/2019	635	off	3799				511.5	FF, connection, restart program, cleared error but not starting blower
9/3/2019	618	off	3799				511.5	FF, connection, restart program, cleared error but not starting blower
9/4/2019	1155	on	3818	9.1	1329	319	511.9	running
9/6/2019	800	off	3827	9.9	900	339	512.1	FF, restarted
9/9/2019	1005	off	3848				512.5	FF, will not restart, Serious error occurred and must shut down, need to stop by the landfill
9/11/2019	710	off	3848	9.2	1276	334	512.5	FF, cleared error, restarted, Still serious error

Appendix E - Working Flare Log Sheet
2019 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302			Panel Display			
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Temperature	Flow	Total Flow (10^6 CF)	Comments
9/13/2019	807	off	3862				512.8	FF, fixed error yesterday, wont start let rest
9/16/2019	900	off	3862	9.6	1175	330	512.8	FF, EA-HTTP.exe error again. restarted
9/18/2019	815	off	3874	10.1	724	360	513.0	FF, EA-HTTP.exe error. restarted
9/20/2019	815	off	3874	10	1185	347	513.0	FF, error clearded, restarted
9/24/2019	615	off	3886	9.4	1330	342	513.3	FF, restarted
9/25/2019	900	off	3898				513.5	FF, will not restart, let rest
9/30/2019	750	off	3898				513.5	FF, will not stay started
10/2/2019	745	off	3898	9.5	1408	348	513.5	FF, restart from Landfill trouble shoot startup. Notice humming from Flame Detector. Tapped on the unit. Restarted slight flame noticed on startup around the unit. Restarted runs for a bit and the shuts down.
10/4/2019	900	off	3900				513.6	FF, will not start. Alternating FF with PF, Will call perennial for assitance. Could have bad flame detector unit.
10/7/2019	1200	off	3900	9.4	1422	346	513.6	FF, restarted
10/9/2019	915	off	3907	10.5	452	366	513.7	FF, restarted
10/11/2019	715	on	3933	9.8	1246	360	514.2	
10/14/2019	730	off	3941	9.7	1257	351	514.4	FF, restarted
10/18/2019	615	off	3967				514.9	FF, will not restart, let rest
10/21/2019	930	off	3967	9.2	1017	312	514.9	FF, restarted
10/23/2019	745	off	3967	8.9	1072	296	514.9	FF, restarted
10/28/2019	900	off	3967				514.9	FF, will not restart
10/30/2019	715	off	3968				514.9	FF, started, then FF and then no flow and pilot fail.
11/4/2019	830	off	3968				514.9	PF need to change gas.
11/8/2019	1115	off	3968				514.9	PF error on burner controller unit, no flow, bad UV sensor
11/18/2019	900	on	3968	9.2	1381	310	514.9	Restarted affter replacing sensor
11/19/2019	800	on	3981	8.9	1105	292	515.2	
11/21/2019	914	off	3993				515.4	FF - no restart let rest
11/22/2019	907	off	3993	9.4	1118	295	515.4	FF restarted

Appendix E - Working Flare Log Sheet
2019 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302			**Panel Display**			
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Temperature	Flow	Total Flow (10^6 CF)	Comments
11/25/2019	925	off	4004	9.4	508	295	515.6	FF restarted
12/2/2019	825	off	4015	8.8	1303	292	515.7	FF, restarted
12/4/2019	2034	off	4041				516.1	FF, reset alarms
12/6/2019	547	off	4055				516.3	
12/8/2019	1858	on	4055	9.2	329	319	516.3	FF, reset alarms
12/10/2019	834	off	4055	8.5	811	258	516.3	FF, restarted
12/12/2019	915	off	4066				516.5	FF, no restart, let rest
12/16/2019	911	off	4066				516.5	FF, no restart, let rest
12/18/2019	943	off	4067	9.0	715	278	516.5	FF, restarted
12/24/2019	910	off	4077	9.6	720	300	516.7	FF resarted
12/27/2019	800	off	4088	9.7	748	305	516.8	FF, restarted
12/30/2019	835	off	4100	9.1	1315	287	517.0	ff, restart
1/1/2020	800	off	4125				517.4	FF, no restart, let rest
1/3/2020	830	off	4125	9.0	1045	280	517.4	ff, restarted
1/6/2020	845	off	4151				517.8	FF, no restart, let rest
1/9/2020	1115	off	4151				517.8	FF, no restart, let rest
1/10/2020	750	off	4151				517.8	FF, no restart, let rest, 4 attempts
1/13/2020	935	off	4151				517.8	FF, norestart, let rest, 3 attempts
1/15/2020	830	off	4151	9.3	286	1266	517.8	FF, restarted
1/22/2020	1300	off	4177				518.2	FF, no restart holding till Friday for well balancing event
1/24/2020	827	off	4177	9.5	303	830	518.2	FF, restarted

F

FCS-1 Forms

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	DA-2	DA-3	DA-4	DA-5	DA-6	DA-7	DA-8
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	X	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 1/18/2019 Inspector's Initials: MVP

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	**DA-2**	**DA-3**	**DA-4**	**DA-5**	**DA-6**	**DA-7**	**DA-8**
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	NS	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 2/26/2019 Inspector's Initials: MVP

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	DA-2	DA-3	DA-4	DA-5	DA-6	DA-7	DA-8
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	NS	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 3/15/2019 Inspector's Initials: MVP

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	DA-2	DA-3	DA-4	DA-5	DA-6	DA-7	DA-8
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	X	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 4/19/2019 Inspector's Initials: MVP

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	DA-2	DA-3	DA-4	DA-5	DA-6	DA-7	DA-8
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	NS	NS	NS	NS	NS	NS	NS	NS
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	X	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 5/28/2019 Inspector's Initials: MVP

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	DA-2	DA-3	DA-4	DA-5	DA-6	DA-7	DA-8
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	X	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 6/11/2019 Inspector's Initials: MVP

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	**DA-2**	**DA-3**	**DA-4**	**DA-5**	**DA-6**	**DA-7**	**DA-8**
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	NS	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 7/19/2019 Inspector's Initials: MVP

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	**DA-2**	**DA-3**	**DA-4**	**DA-5**	**DA-6**	**DA-7**	**DA-8**
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	NS	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 8/21/2019 Inspector's Initials: MTP

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	DA-2	DA-3	DA-4	DA-5	DA-6	DA-7	DA-8
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	NS	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 9/24/2019 Inspector's Initials: MTP

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	DA-2	DA-3	DA-4	DA-5	DA-6	DA-7	DA-8
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	NS	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 10/24/2019 Inspector's Initials: BKM

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	DA-2	DA-3	DA-4	DA-5	DA-6	DA-7	DA-8
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	NS	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 11/19/2019 Inspector's Initials: BKM

FORM FCS-1
FINAL COVER SYSTEM INSPECTION CHECKLIST
CLARKSTOWN LANDFILL

Item No.	Item Title	Drainage Area Number*							
		DA-1	DA-2	DA-3	DA-4	DA-5	DA-6	DA-7	DA-8
Vegetated Cover									
1	Vegetative Growth (grass height, undesirable species)	X	X	X	X	X	X	X	X
2	Sparse Vegetation/Die-Outs	X	X	X	X	X	X	X	X
Protective Soil Cover and Cap Components									
1	Erosion Damage	X	X	X	X	X	X	X	X
2	Animal Burrowing	X	X	X	X	X	X	X	X
3	Settlement/Subsidence	X	X	X	X	X	X	X	X
4	Surface Water Ponding	X	X	X	X	X	NS	X	X
5	Extensive Die-Out	X	X	X	X	X	X	X	X
6	Slope Stability	X	X	X	X	X	X	X	X
7	Seepage	X	X	X	X	X	X	X	X
8	Vandalism	X	X	X	X	X	X	X	X

Notes:
1 Use a check in the box to indicate that the specific item number in the area has been inspected and no problems were noted.
2 Use "NS" (Not Satisfactory) where problems are noted.
3 For boxes checked NS, provide, on Form DP-1, a description of the deficiency/problem. Attach additional sheets as necessary.
* Refer to Figure 2-4 for delineations of inspection areas.

Date: 12/24/2019 Inspector's Initials: BKM

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AR-1 Forms

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 1/18/2019 Inspector's Initials: MVP

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 2/26/2019 Inspector's Initials: MVP

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 3/15/2019 Inspector's Initials: MVP

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 4/19/2019 Inspector's Initials: MVP

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 5/28/2019 Inspector's Initials: MVP

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 6/11/2019 Inspector's Initials: MVP

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 7/19/2019 Inspector's Initials: MVP

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 8/21/2019 Inspector's Initials: MTP

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 9/24/2019 Inspector's Initials: MTP

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 10/24/2019 Inspector's Initials: BKM

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 11/19/2019 Inspector's Initials: BKM

FORM AR-1

INSPECTION CHECKLIST FORM

ACCESS ROADS

CLARKSTOWN LANDFILL, WEST NYACK, NEW YORK

Description	Status/Comments
Perimeter Access Road: Eastern Side (Compost access roads)	
- *Potholes*	X
- *Condition of asphalt/gravel*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
Access Road Across Top of Landfill	X
- *Potholes*	X
- *Evidence of debris and/or obstructions*	X
- *Uneven settlement*	X
- *Ponding of water*	X

Notes:

- Use a check in the status/comments box to indicate that the specific item in the area has been inspected and no problems were noted.
- Use "NS" (Not Satisfactory) in the status box where problems are noted.
- For boxes checked NS, provide, on Form DP-1, a description of the deficiency. Attach additional sheets, as necessary.

Date: 12/24/2019 Inspector's Initials: BKM