Operation and Maintenance Report

Clarkstown Sanitary Landfill

Period - January-December 2023

West Nyack NY

March 25, 2024

PREPARED FOR:

TOWN OF CLARKSTOWN
DEPARTMENT 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 2023

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

Prepared by: Savannah Ward Date: 2/15/2024

Checked by: Colin Mills Date: 3/22/2024

Project Manager: Colin Mills

Revised: 3/22/2024

Contents

Tables

Graphs

Figures (Following Text)

Appendices (At Back of Report Following Figures)

This page is intentionally left blank.

1 Introduction

The purpose of this annual report is to provide an operation and maintenance (O&M) summary for the period of January 2023 through December 2023 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 New York State Route 59, is bound on the east side by New York State Route 303, and on the north, south and west sides by buffer wetlands. The property is roughly 100 acres. The landfill originally operated from the 1940s to 1990. It was subsequently closed under an Order on Consent issued by the New York State Department of Environmental Conservation (NSYDEC). The Landfill is a listed inactive Hazardous Waste Class 2 site (Site No. 344001) but does not appear on the United States Environmental Protection Agency (USEPA) National Priority List (NPL).

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. Construction of the 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 site 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 the 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 2023, the valve at Leg K is approximately 5% open. The southeast collector is regulated by Leg Valve A which is currently approximately 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.

The total methane concentration on July 27, 2023, at Leg A was 78.9%. 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. A second reading was not obtained due to the intermittent inactivity of the flare during the site visits.

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, DL-5, a 2" PVC drip leg located adjacent to GE-09 (referred to as "GE-09"), 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 in landfill gas lines and these issues are not unique to this landfill.

DL-1, DL-5, and GE-09 are located in the vicinity of Leg Valve C, which services two gas extraction wells (GE-09 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-02 and GE-03. Six gas extraction wells are located up-gradient of the drip leg (GE-03 through GE-08). 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 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. This method has been effective in removing the blockages caused by condensate 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-10.

Table 2-1: Approximate Volume of Condensate Removed from Drip Legs

Date	DL-1	DL-5	GE-09	DL-10
	Volume purged (Liters)	Volume purged (Liters)	Volume purged (Liters)	Volume purged (Liters)
January 30, 2023	180	56	48	327
February 21, 2023	Dry	7	24	106
March 17, 2023	60	25	48	45
April 27, 2023	Dry	53	Dry	24
June 1, 2023	30	69	30	279
June 28, 2023	3	168	24	48
July 27, 2023	48	31	54	18
August 30, 2023	30	15	48	21
September 21, 2023	54	18	102	72
October 24, 2023	14	66	324	53
November 28, 2023	108	27	174	75
December 27, 2023	24	81	84	135
Total Removed	**551**	**616**	**960**	**1,203**

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. Observations noted during the monthly inspections were reported on Form DP-1, which is 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 38 locations with new QED® Accu-Flo well heads, located above grade. Three of these were replaced in December of 2022 (GE-10, GE-15, and GE-26). 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 for the wells that have been retrofitted.

Fourteen LFG extraction wells and associated valves have not yet been retrofitted. These vaults are constructed out of heavy-duty fiberglass. Over the years, some of the vaults have exhibited 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 were 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 of, 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 monthly. 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: an LFG control system, an 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 to minimize human exposure.

On occasion, the flare does not automatically start at the programed start time and requires manual resetting of the system. The system, though semi-automated, does not self-reset alarm conditions (e.g., an initial 'flame fail' condition on startup) and thus requires subsequent attempts to be initiated either remotely or physically at the control panel. Due to these operational constraints, regular (2-4 times per week) site visits by HDR were historically necessary to ensure that the flare operates on a regular basis. A remote interface that allows HDR personnel to view the control panel and reset the alarm condition remotely was installed, reducing the frequency of field visits.

Often the system will start after two or three attempts, though sometimes more are required. Failed restarts are frequently attributed to pilot flame fail errors resulting in lack of ignition or flame failures due to insufficient volume of methane in the gas mixture. Pilot failures are sometimes caused by an empty pilot flame fuel tank, which is field verified and replaced if needed.

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 when operational. This monitoring precludes the need to repair the GAC detector currently.

A Sierra RV50 5G capable wireless modem was installed in the control panel cabinet at the end of December 2022 to continue being able to remotely access the system. The prior modem used wireless technology, which was phased out by the wireless service provider at the end of the year. On January 3, 2023, the set up for the modem was finalized and remote access for the control panel was reestablished.

As of the end of the 2023 reporting period, the flare system was offline due to electrical supply failure. HDR and the Town are working to identify and replace the faulty components. It is anticipated that the system will be brought online again early in 2024. The failure is thought to be related to multiple heavy rainstorm events.

3.2 Blower Assembly

The blower assembly is 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).

Four lower explosive limit (LEL) sensors are located at the corners of the skid and are checked and calibrated annually using an MSA Ultima® calibrator. One of the sensors and controller unit had malfunctioned after a power outage causing the system to be down from November 16, 2020 through March 5, 2021. See discussion in section 3.1 in the 2021 O&M report for more details.

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.

On April 29, 2022, TAM Enterprises serviced the two blowers and assessed the damage to Blower 302. Blower 301 was serviced, and the amperage and voltage being used were within specification. Blower 302 had a damaged drive coupling that needed to be replaced. On December 7, 2022, TAM Enterprises replaced the damaged coupling on Blower 302

with a Rexnord Omega coupling. Blower 302 started but the amperage and flow rate were erratic leading to a shutdown due to flame flail. Further investigation is warranted.

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 fresh air 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.

4 Landfill Gas System Overall Gas Evaluation

LFG is typically composed of methane (35%-60%), carbon dioxide (35%-60%), nitrogen (3%-12%), and oxygen (0%-5%) 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.

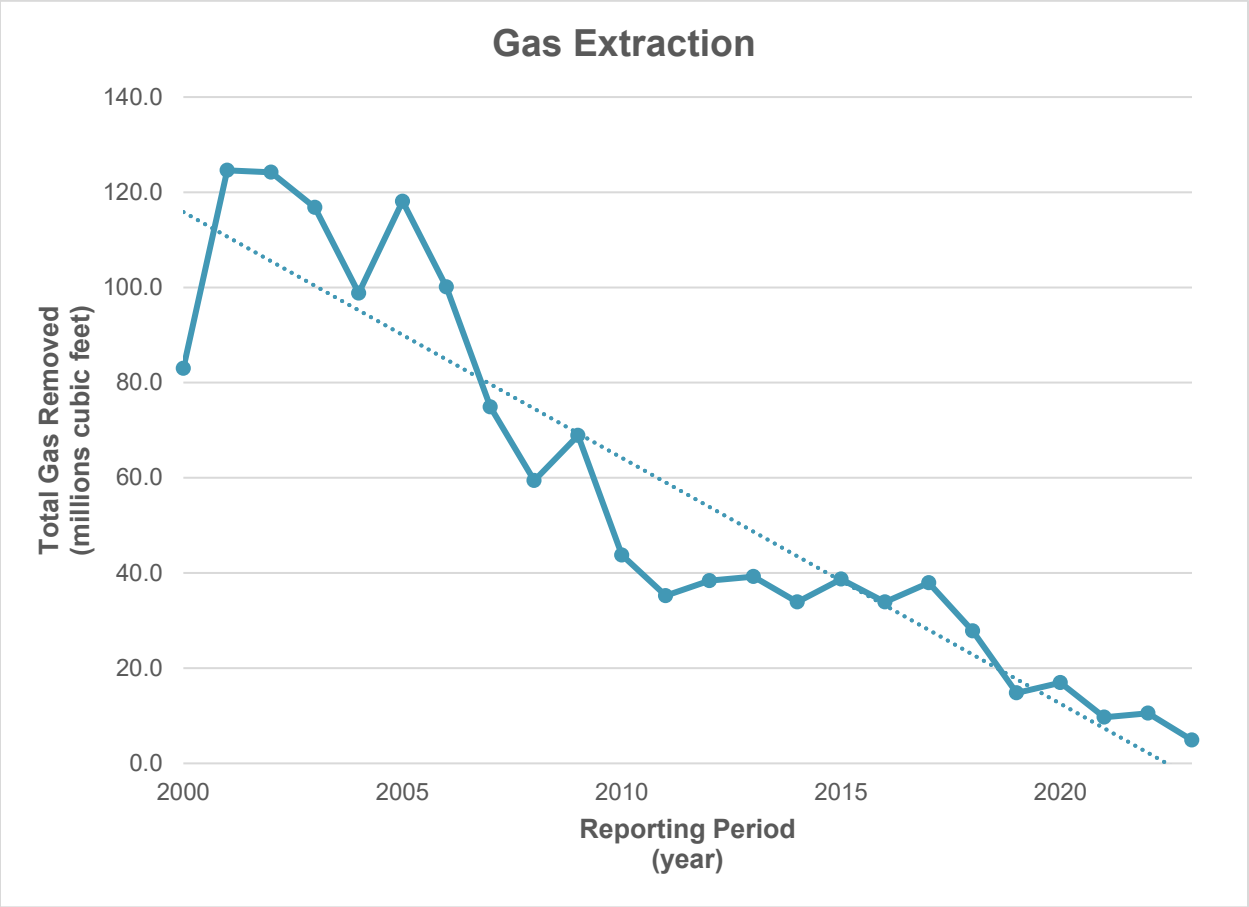
4.1 Quantitative Analysis of Gas Recovery

For the 2023 period, log sheets were maintained to record the gas flow rate, cumulative and daily gas extraction volumes, flare temperatures, blower amperage, and cumulative blower run-time. The data sheets are included in this report as Appendix D.

The total LFG recovered in 2023 was approximately 4.89 million cubic feet. This is large decrease in gas production compared to the previous year’s volume (10.54 million cubic feet). This is likely a function of decrease run time compared to the previous year. The system operated for 385 hours in 2023, which to 10.5% runtime based on a 10 hour per day operation cycle. This is a decrease over the previous reporting year’s runtime of 31%.

Graph 4-1 illustrates the volume of landfill gas removed on an annual basis. A decreasing trend in the volume of gas removed from the Landfill over the past 22 years is observed. This is the expected result of continued landfill gas removal.

Graph 4-1: Gas Volume Extraction Trends



4.2 Qualitative Analysis of Gas Recovery

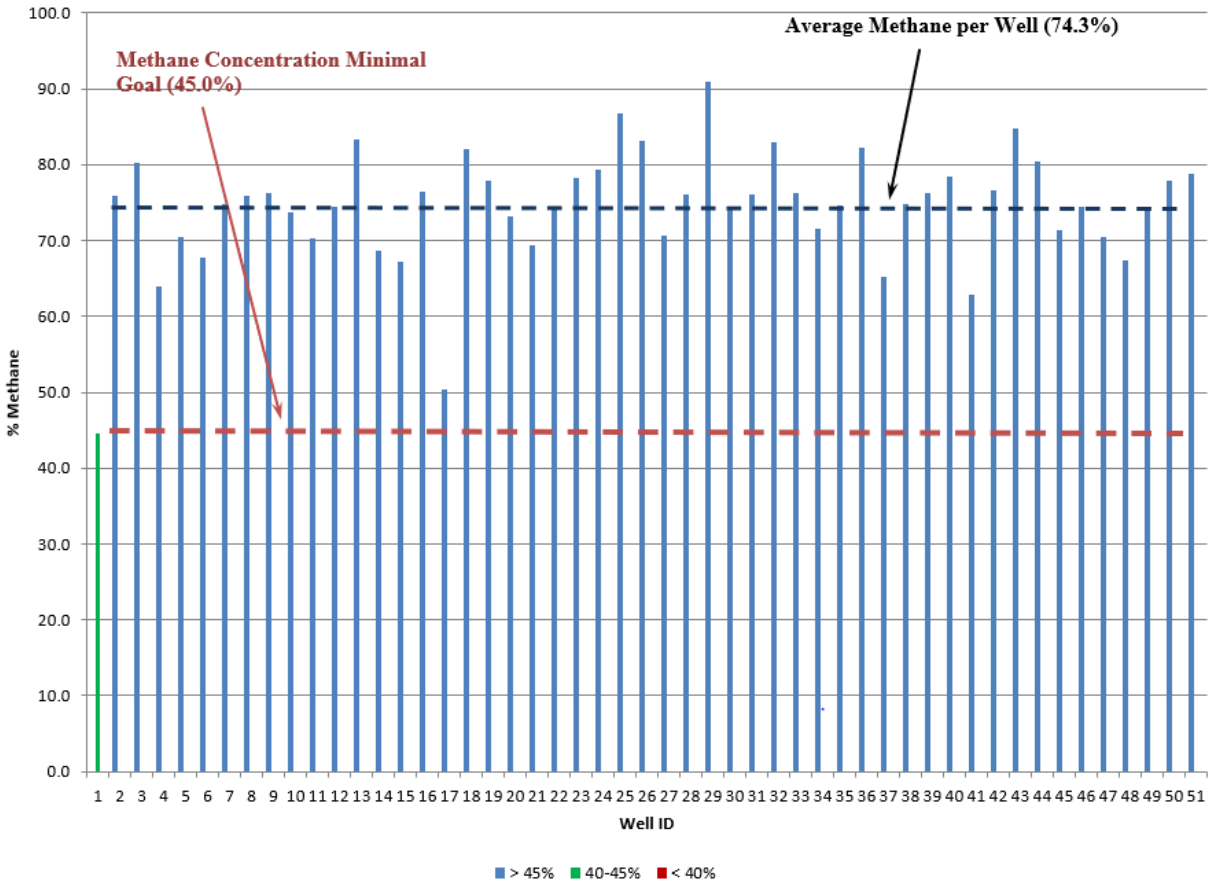
LFG quality is monitored at each of the 52 gas extraction wells and at the flare station. Optimal gas quality consists of a high methane concentration (greater than 45%) and low carbon dioxide, oxygen, and nitrogen levels. Methane is required to sustain the flaring of the gas. The primary reason to burn 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 more than 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 74.3% (up from 67.5% the previous year). 51 wells had an average methane concentration above the 45% methane goal. One of the fifty-two wells were below the goal (>45%) but within 5% of it. Diminishing methane levels are expected in these areas and data from the last 20 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 observed during the reporting period that the area of historically low methane production located on the northwest side of the landfill (Figure 8) has focused itself around GE-1. It is not clear why methane production in this area have changed in 2023 operational year but monthly well balancing is performed as necessary to account for these fluctuations.

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 2023

Month	Average Methane in Well Field (%)	Average Methane at Flare (%)	Difference (Field – Flare)
January	59.8	42.4	17.4
February	63.3	NC	NA
March	NC	NC	NA
April	NC	NC	NA
May	69.9	45.1	24.8
June	70.6	41.9	28.7
July	78.1	46.5	31.6
August	79.1	46.1	33.0
September	NC	NC	NA
October	NC	NC	NA
November	NC	NC	NA
December	NC	NC	NA

Note: NC = Not Collected, NA = Not Applicable
Flare was not operational in late December due to an electrical service failure.

Differences between average percent methane in the well field versus average percent methane at the flare were observed during each month that readings were able to be collected. Measurements were not collected during some months due to the flare not running, typically due to flame failures likely related to flare gas mixture. Refer to Appendix E for measurement logs.

The larger variations in average well field methane in the summer appear to be related to warmer weather conditions influencing gas production inside the landfill. Small 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 most 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 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. 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 may attribute to a combination of factors including the following:

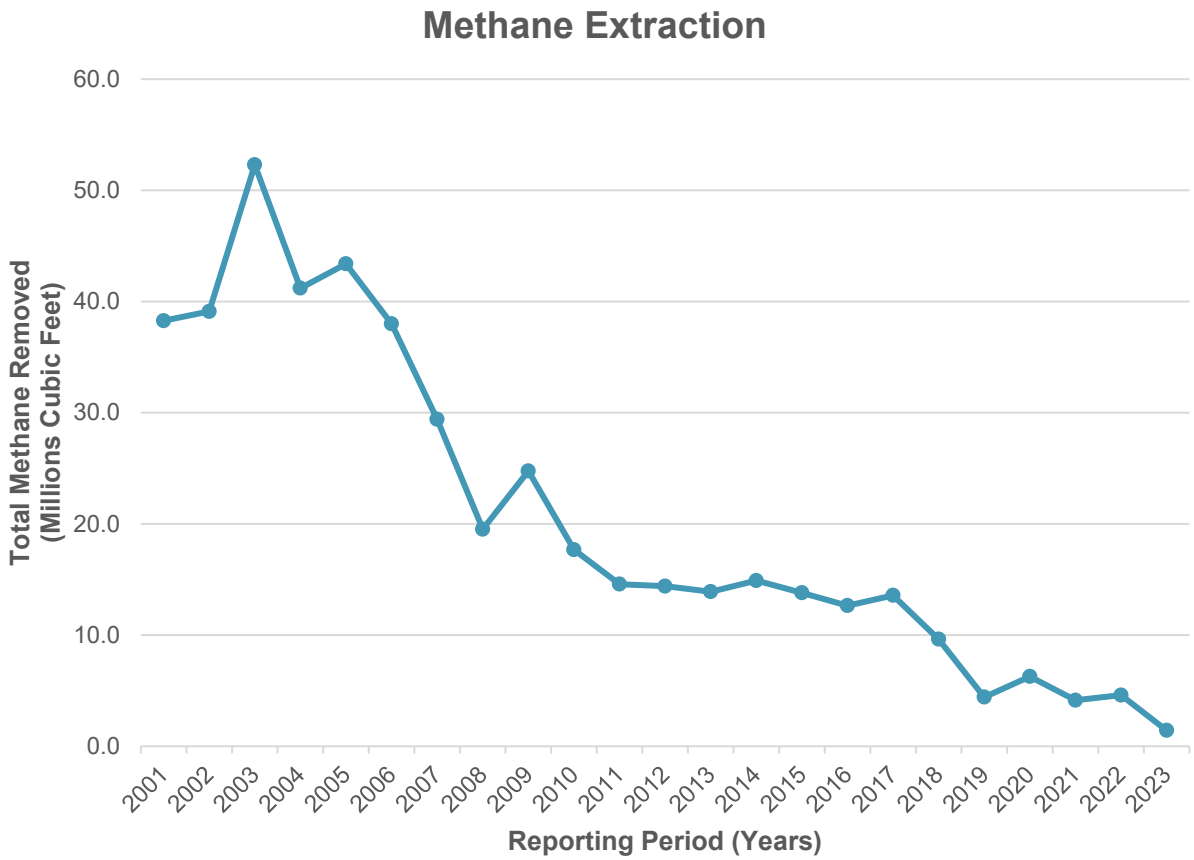
- individual well head valve settings,
- time of day flare operation was observed, and
- lag-time attributed to the distance from individual wells to the flare.

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.

Since the data is collected monthly, 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 1.4 million cubic feet of methane were removed during the 2023 reporting period. The graph illustrates the decreasing rate of methane removal from the Landfill over the past 22 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 by a third-party consultant for the Town of Clarkstown and reported independently of this report.

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 could 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 Figure 9. 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 G).

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. Inspection of the leachate collection chambers is documented on Form FS-3 which can be found in Appendix A of this report.

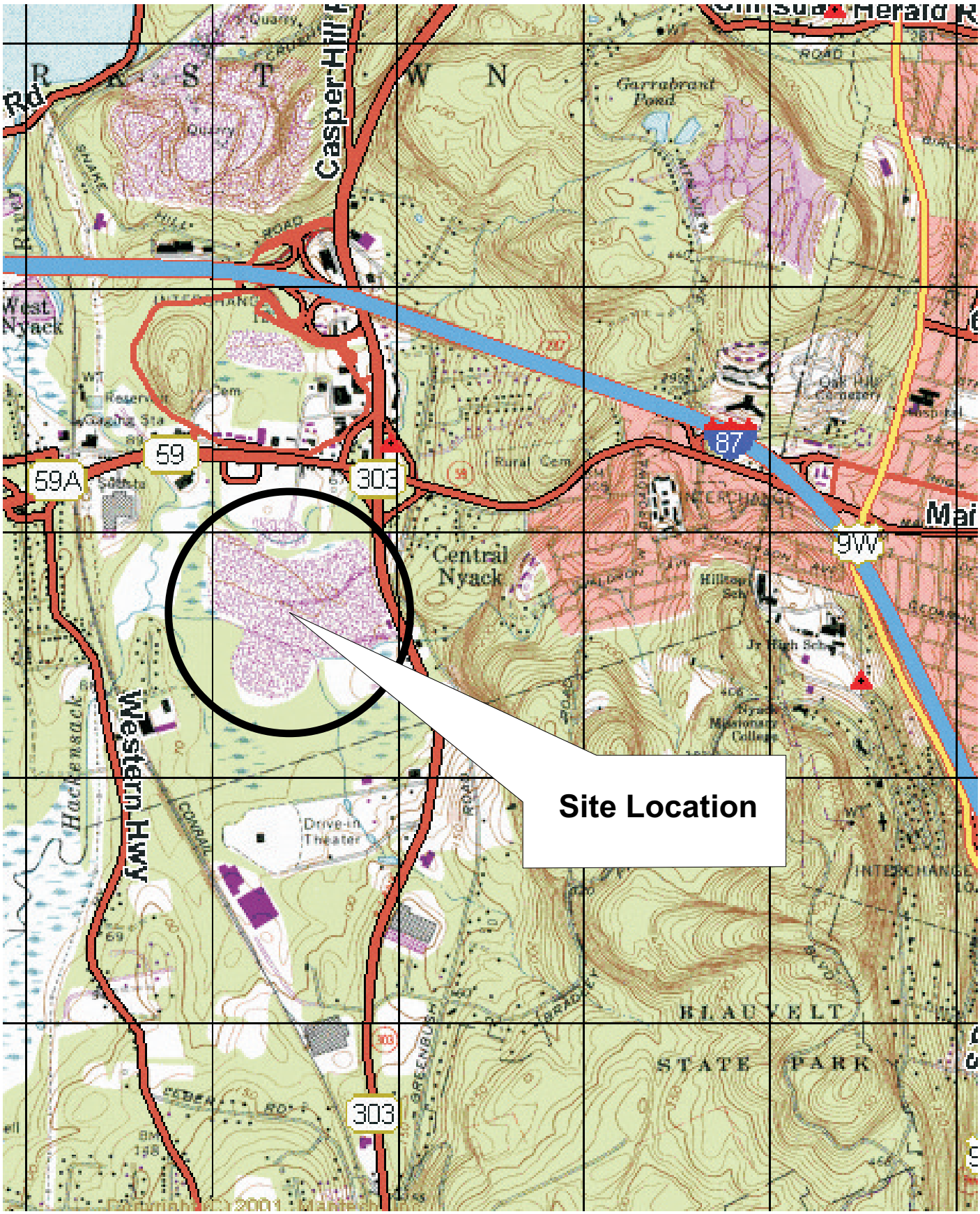
6 Conclusions

Landfill operations have been effective at managing LFG and leachate during this reporting period. The levels of methane at the Landfill have fluctuated with time but continue demonstrate a downward trend. Diminishing levels are most evident around the perimeter of the Landfill.

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

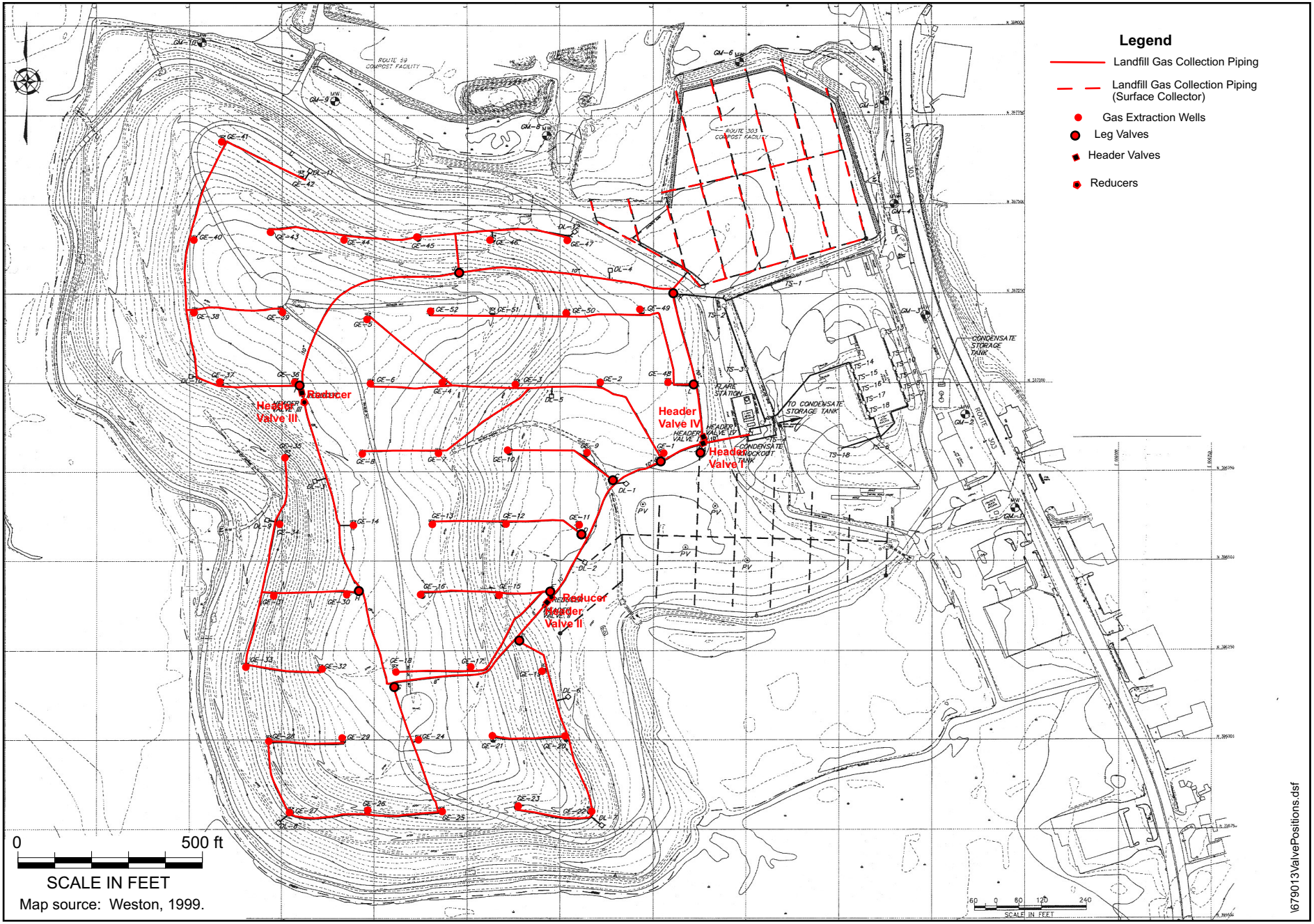
The Town continues to invest in maintaining the aging LFG collection system at the site. It is anticipated that additional gas extraction well head upgrades and blower maintenance will continue as necessary; however, the Town/HDR would also like to open a dialogue with the State to explore the ability of converting the active collection system to a passive venting option in the future.

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

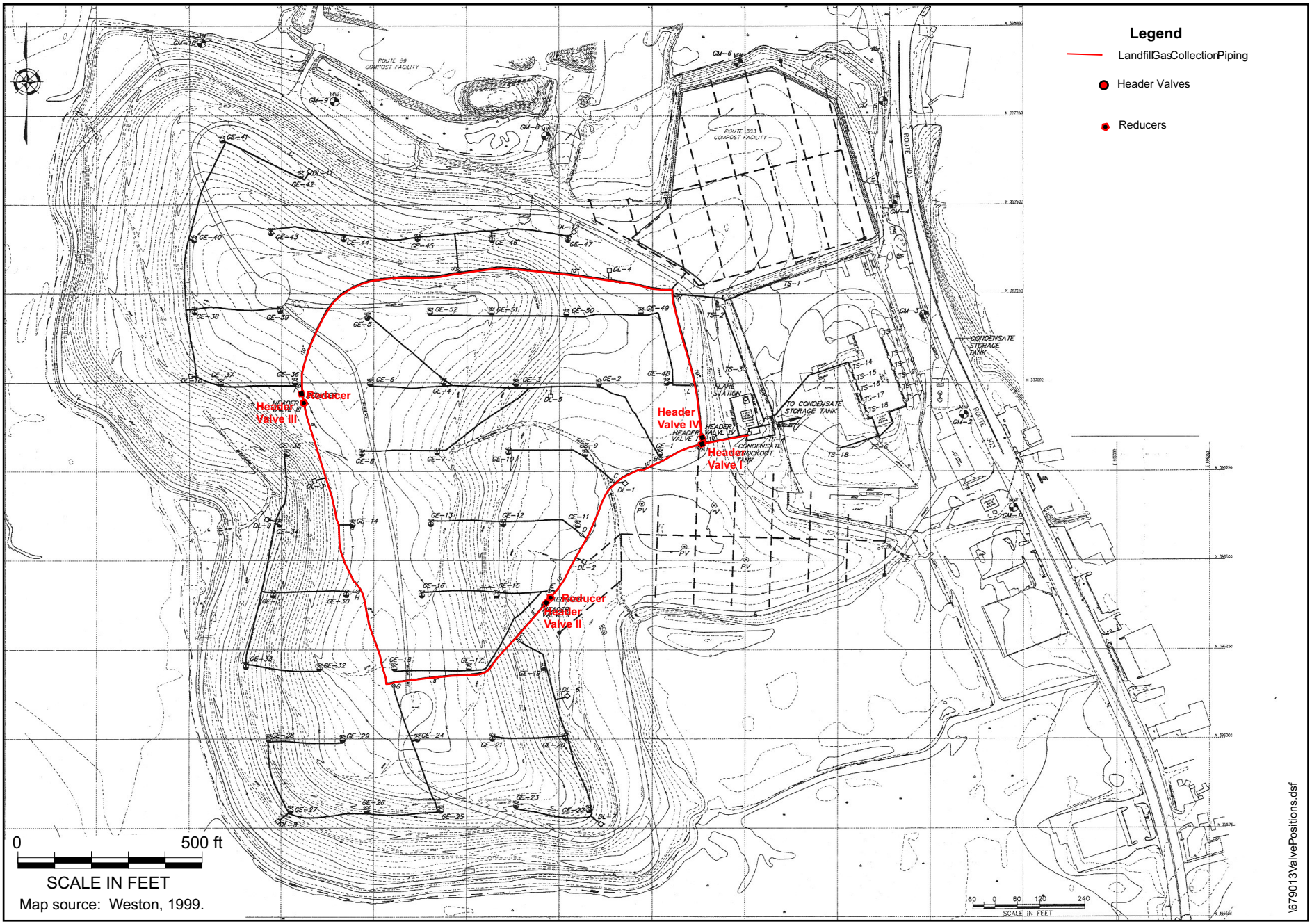


Henningson, Durham & Richardson Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

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

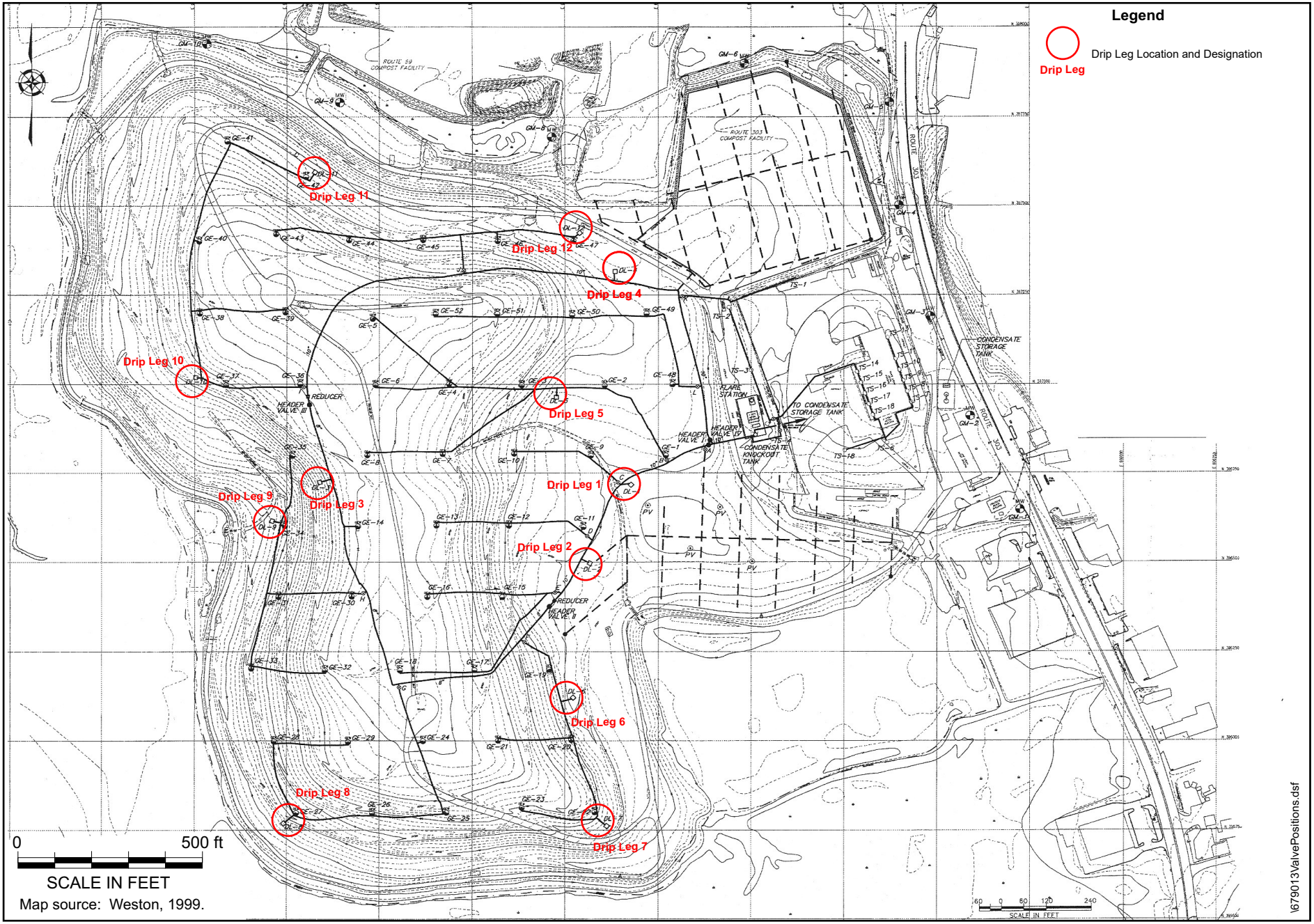
Figure 3

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

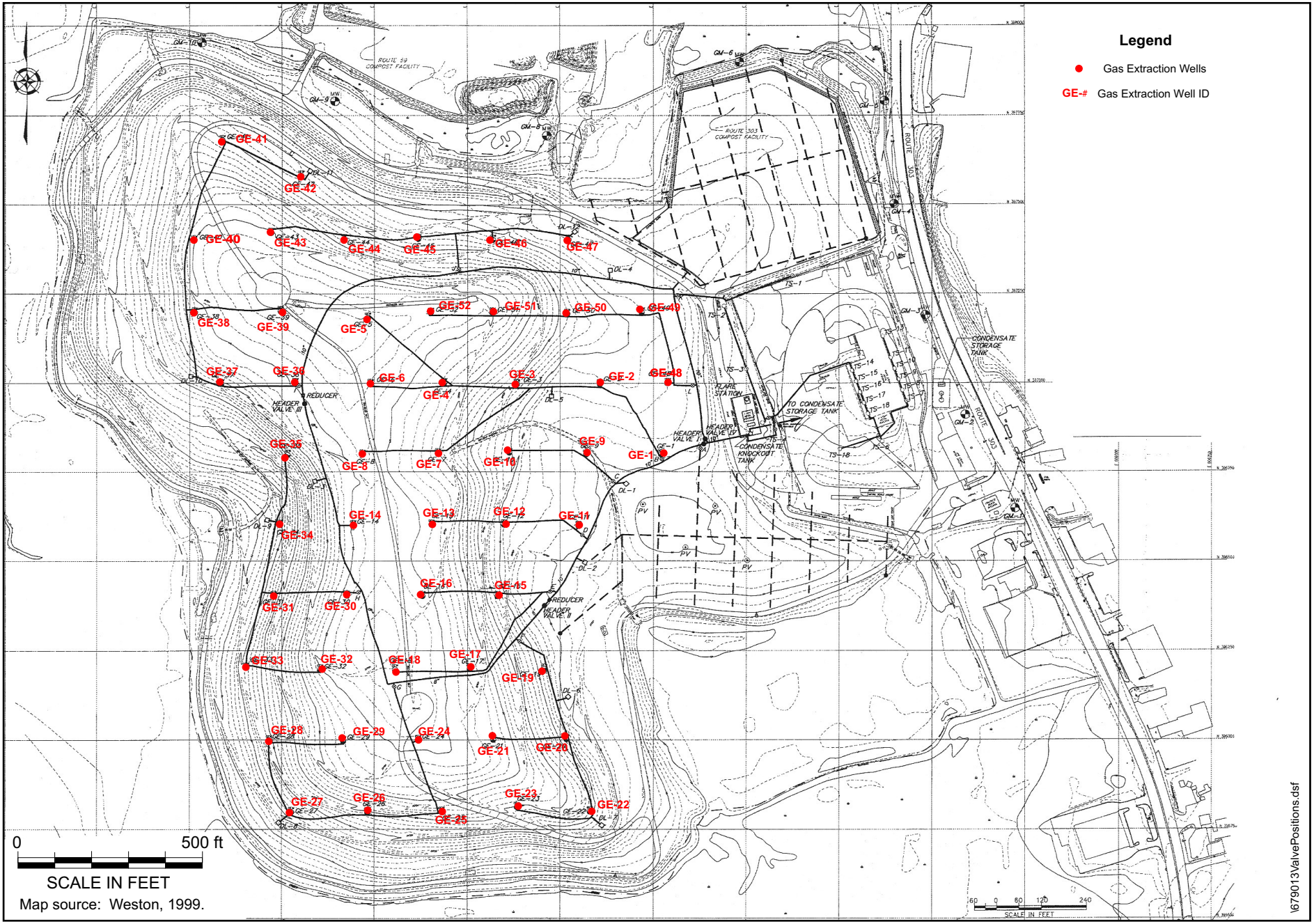


Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

404 Airport Executive Park
Nanuet, NY 10954

Drip Leg Assembly Locations
Clarkstown Landfill
West Nyack, NY 10994

Figure 5



Map source: Weston, 1999.

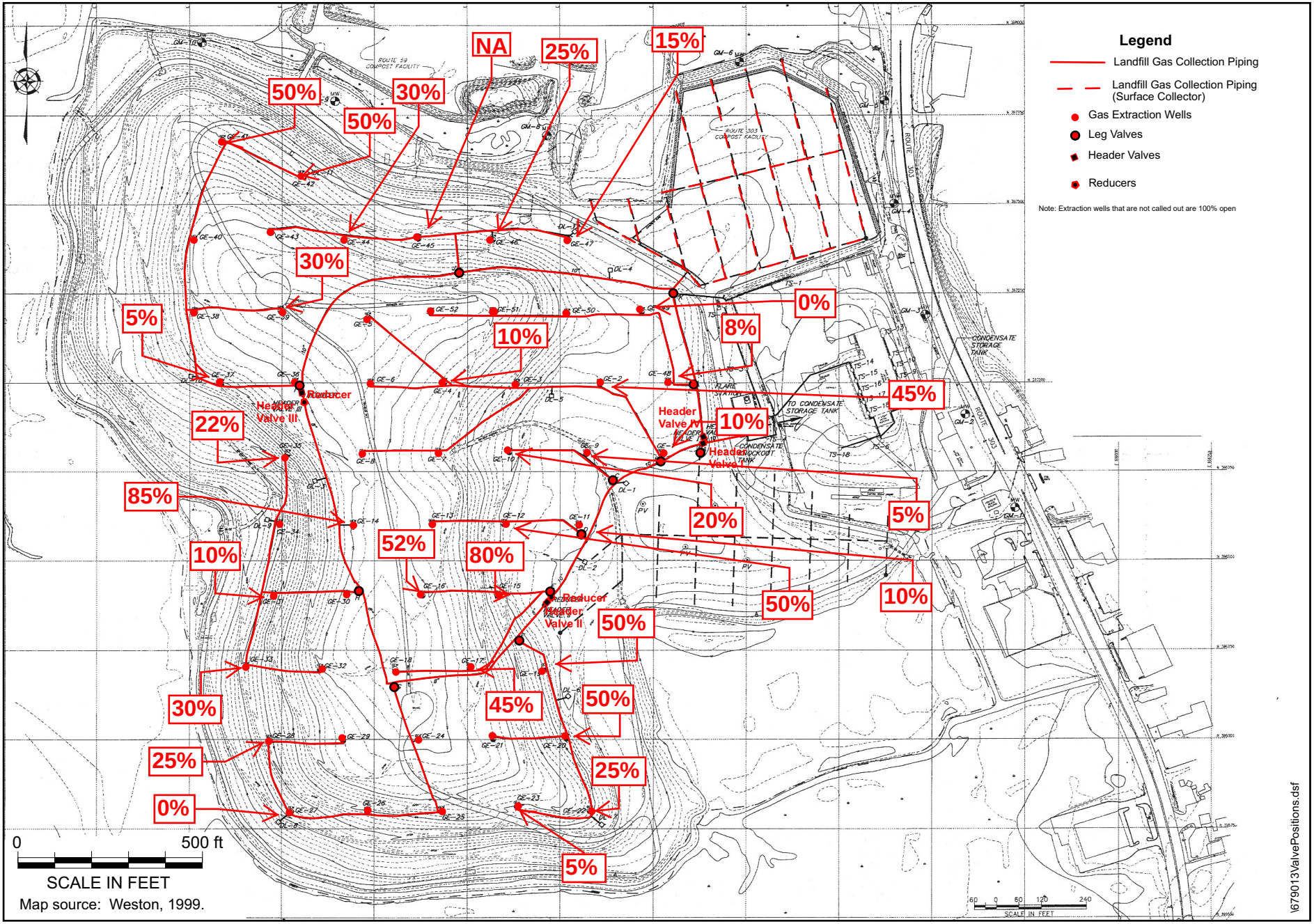
\679013\ValvePositions.dsf

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

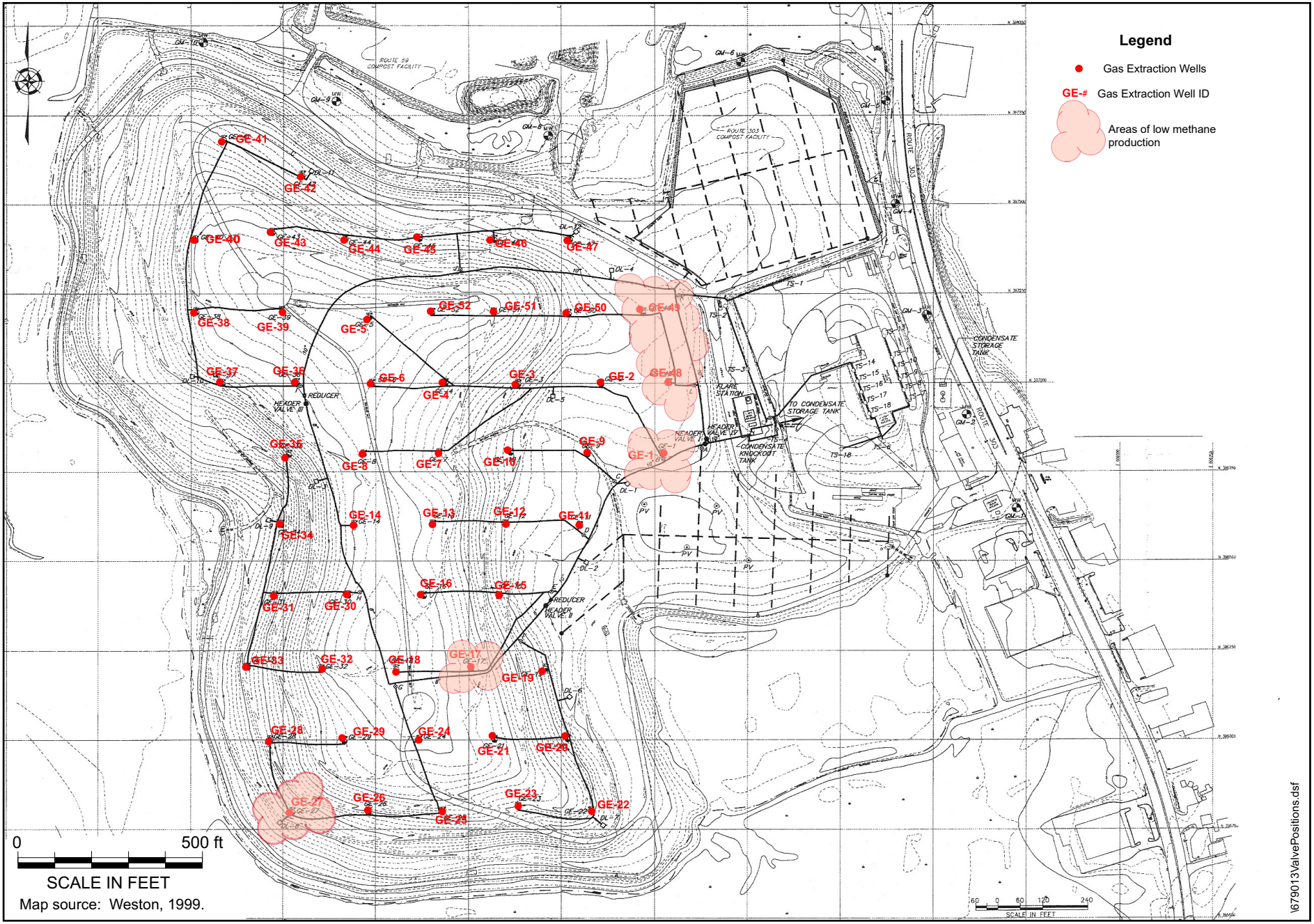


Henningson, Durham & Richardson Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

404 Airport Executive Park
Nanuet, NY 10954

Well Head Valve Settings
Clarkstown Landfill
West Nyack, NY 10994

Figure 7

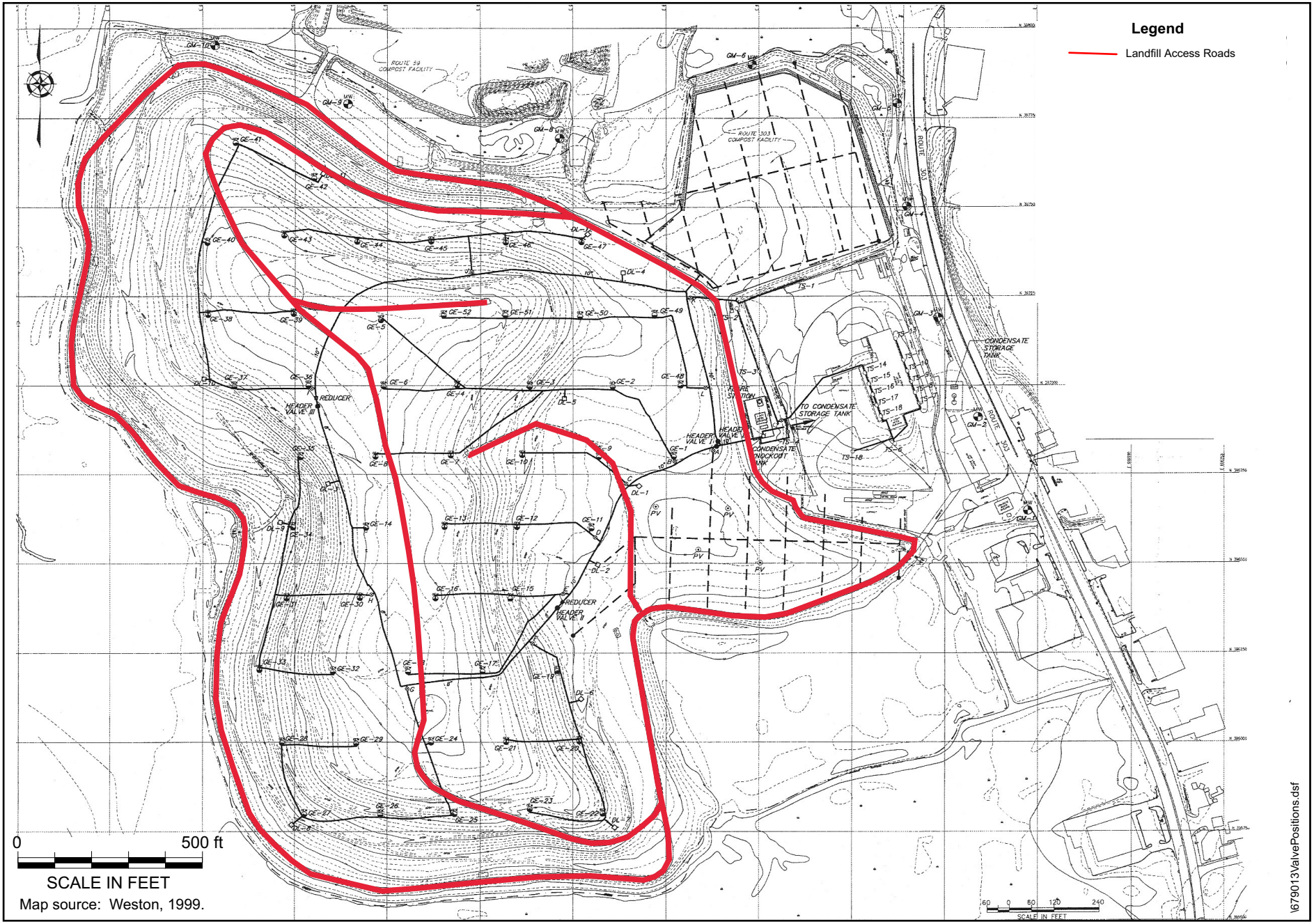


Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

404 Airport Executive Park
Nanuet, NY 10954

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

Figure 8



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

404 Airport Executive Park
Nanuet, NY 10954

Landfill Access Roads
Clarkstown Landfill
West Nyack, NY 10994

Figure 9

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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 1/30/2023 Inspector's Initials: MR

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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 2/21/2023 Inspector's Initials: SMW

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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 3/17/2023 Inspector's Initials: MR

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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 4/27/2023 Inspector's Initials: SMW

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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 6/1/2023 Inspector's Initials: MTP / SMW

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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 6/22/2023 – 7/7/2023 Inspector's Initials: SMW / MTP / MR / CM

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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 7/27/2023 Inspector's Initials: SMW / MR

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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 8/30/2023 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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 9/21/2023 Inspector's Initials: SMW

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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 11/01/2023 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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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: 11/28/2023 Inspector's Initials: SMW

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
Leachate Collection Chambers		
17	Inspect leachate collection chambers	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:12/27/2023 Inspector's Initials: CM

B

DP-1Forms

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System does not stay running and is very hard to get lit.**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.**
RECOMMENDATIONS:
1. **Replace with new above grade well heads (eliminate vaults).** 2. **Troubleshoot why the system does not remain lit.**

Date: 1/30/2023 Inspector's Initials: MR

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System does not stay running and is very hard to get lit.**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.**
RECOMMENDATIONS:
1. **Replace with new above grade well heads (eliminate vaults).** 2. **Troubleshoot why the system does not remain lit.**

Date: 2/21/2023 Inspector's Initials: SW

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System having trouble running for the period of time necessary to take readings from wells and vaults.** 3. **Issues include errors from control box stating "Pilot Fail", "Low Flow rate Shutdown", and "Flame Fail".**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.** 2. **HDR is continuing to troubleshoot the system and are working to replace or repair any part(s) deemed faulty or disruptive to the ongoing function of the system.**
RECOMMENDATIONS:
1. **Replace with new above grade well heads (eliminate vaults).**

Date: 3/17/2023 Inspector's Initials: MR

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System having trouble running for the period of time necessary to take readings from wells and vaults.** 3. **Issues include errors from control box stating "Pilot Fail", "Low Flow rate Shutdown", and "Flame Fail".**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.** 2. **HDR is continuing to troubleshoot the system and are working to replace or repair any part(s) deemed faulty or disruptive to the ongoing function of the system.**
RECOMMENDATIONS:
1. **Replace with new above grade well heads (eliminate vaults).**

Date: 4/27/2023 Inspector's Initials: SMW

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System having trouble running for the period of time necessary to take readings from wells and vaults.** 3. **Issues include errors from control box stating "Pilot Fail", "Low Flow rate Shutdown", and "Flame Fail".**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.** 2. **HDR is continuing to troubleshoot the system and are working to replace or repair any part(s) deemed faulty or disruptive to the ongoing function of the system.**
RECOMMENDATIONS:
1. **Replace with new above grade well heads (eliminate vaults).**

Date: 6/1/2023 Inspector's Initials: SMW/MTP

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System having trouble running for the period of time necessary to take readings from wells and vaults.** 3. **Issues include errors from control box stating "Pilot Fail", "Low Flow rate Shutdown", and "Flame Fail".**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.** 2. **HDR is continuing to troubleshoot the system and are working to replace or repair any part(s) deemed faulty or disruptive to the ongoing function of the system.**
RECOMMENDATIONS:
1. **Replace with new above grade well heads (eliminate vaults).**

Date: 6/22/2023-7/7/2023 Inspector's Initials: SMW/MTP/MR/CM

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System having trouble running for the period of time necessary to take readings from wells and vaults.** 3. **Issues include errors from control box stating "Pilot Fail", "Low Flow rate Shutdown", and "Flame Fail".**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.** 2. **HDR is continuing to troubleshoot the system and are working to replace or repair any part(s) deemed faulty or disruptive to the ongoing function of the system.**
RECOMMENDATIONS:
1. **Replace with new above grade well heads (eliminate vaults).**

Date: 7/27/2023 Inspector's Initials: SMW/MR

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System having trouble running for the period of time necessary to take readings from wells and vaults.** 3. **Issues include errors from control box stating "Pilot Fail", "Low Flow rate Shutdown", and "Flame Fail".**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.** 2. **HDR is continuing to troubleshoot the system and are working to replace or repair any part(s) deemed faulty or disruptive to the ongoing function of the system.**
RECOMMENDATIONS:
1. **Replace with new above grade well heads (eliminate vaults).**

Date: 8/30/2023 Inspector's Initials: MTP

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System having trouble running for the period of time necessary to take readings from wells and vaults.** 3. **Issues include errors from control box stating "Pilot Fail", "Low Flow rate Shutdown", and "Flame Fail".**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.** 2. **HDR is continuing to troubleshoot the system and are working to replace or repair any part(s) deemed faulty or disruptive to the ongoing function of the system.**
RECOMMENDATIONS:
2. **Replace with new above grade well heads (eliminate vaults).**

Date: 9/21/2023 Inspector's Initials: SMW

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System having trouble running for the period of time necessary to take readings from wells and vaults.** 3. **Issues include errors from control box stating "Pilot Fail", "Low Flow rate Shutdown", and "Flame Fail".**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.** 2. **HDR is continuing to troubleshoot the system and are working to replace or repair any part(s) deemed faulty or disruptive to the ongoing function of the system.**
RECOMMENDATIONS:
3. **Replace with new above grade well heads (eliminate vaults).**

Date: 11/01/2023 Inspector's Initials: MTP

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System having trouble running for the period of time necessary to take readings from wells and vaults.** 3. **Issues include errors from control box stating "Pilot Fail", "Low Flow rate Shutdown", and "Flame Fail".**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.** 2. **HDR is continuing to troubleshoot the system and are working to replace or repair any part(s) deemed faulty or disruptive to the ongoing function of the system.**
RECOMMENDATIONS:
4. **Replace with new above grade well heads (eliminate vaults).**

Date: 11/28/2023 Inspector's Initials: SMW

FORM DP-1
DESCRIPTION OF DEFICIENCIES AND PROBLEMS
CLARKSTOWN LANDFILL

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

LOCATION: West Nyack, NY

PROBLEM/DEFICIENCY IDENTIFICATION:
1. **Many of the vaults are experiencing the effects of settling.** 2. **System having trouble running for the period of time necessary to take readings from wells and vaults.** 3. **Issues include errors from control box stating "Pilot Fail", "Low Flow rate Shutdown", and "Flame Fail".**
ACTION TAKEN:
1. **Some vault lids remain open because the pipe is at a greater elevation then the vault. Open vault doors are causing breakdown of PVC sampling ports, and in some cases the flexible hose. Damaged ports have been sealed temporarily with duct tape.** 2. **HDR is continuing to troubleshoot the system and are working to replace or repair any part(s) deemed faulty or disruptive to the ongoing function of the system.**
RECOMMENDATIONS:
1. **Replace with new above grade well heads (eliminate vaults).**

Date: 12/27/2023 Inspector's Initials: CM

C

Well Balancing Forms

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
B	1/30/2023	1	Cannot collect readings									
B	2/21/2023	1	28.5	11.2	12.7	47.6	-0.4	0.011	9.2	N/C	10% Open	10% Open
B	3/17/2023	1	Cannot collect readings									
B	4/27/2023	1	Cannot collect readings									
B	6/1/2023	1	49.5	18.2	4.6	27.7	-0.3	0.063	22.1	N/C	10% Open	10% Open
B	7/7/2023	1	Cannot collect readings									
B	7/27/2023	1	27.9	7.5	12.5	52.1	-0.2	0.074	24.0	N/C	10% Open	10% Open
B	8/30/2023	1	72.2	19.9	1.7	6.1	-0.3	0.070	23.3	N/C	12.5% Open	10% Open
B	9/21/2023	1	Cannot collect readings									
B	10/24/2023	1	Cannot collect readings									
B	11/28/2023	1	Cannot collect readings									
B	12/27/2023	1	Cannot collect readings									
B	1/30/2023	2	Cannot collect readings									
B	2/21/2023	2	Cannot collect readings									
B	3/17/2023	2	Cannot collect readings									
B	4/27/2023	2	Cannot collect readings									
B	6/1/2023	2	76.4	23.3	0.1	0.2	-0.2	-0.508	0.0	N/C	45% Open	45% Open
B	7/7/2023	2	Cannot collect readings									
B	7/27/2023	2	76.2	23.7	0.0	0.1	-2.1	0.061	21.8	N/C	45% Open	45% Open
B	8/30/2023	2	75.0	25.0	0.0	0.0	-0.3	0.066	22.6	N/C	50% Open	45% Open
B	9/21/2023	2	Cannot collect readings									
B	10/24/2023	2	Cannot collect readings									
B	11/28/2023	2	Cannot collect readings									
B	12/27/2023	2	Cannot collect readings									
B	1/30/2023	3	Cannot collect readings									
B	2/21/2023	3	76.4	20.9	0.3	2.4	0.1	-0.448	0.0	N/C	100% Open	100% Open
B	3/17/2023	3	Cannot collect readings									
B	4/27/2023	3	Cannot collect readings									
B	6/1/2023	3	84.4	19.5	0.0	0.1	-0.2	0.004	5.6	N/C	100% Open	100% Open
B	7/7/2023	3	Cannot collect readings									
B	7/27/2023	3	80.8	19.1	0.0	0.1	-1.8	0.070	23.3	N/C	100% Open	100% Open
B	8/30/2023	3	79.0	20.9	0.0	0.1	-0.3	0.058	21.2	N/C	100% Open	100% Open

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
B	9/21/2023	3	Cannot collect readings									
B	10/24/2023	3	Cannot collect readings									
B	11/28/2023	3	Cannot collect readings									
B	12/27/2023	3	Cannot collect readings									
B	1/30/2023	4	Cannot collect readings									
B	2/21/2023	4	66.2	16.8	1.2	15.8	0.0	0.013	10.0	N/C	10% Open	10% Open
B	3/17/2023	4	Cannot collect readings									
B	4/27/2023	4	Cannot collect readings									
B	6/1/2023	4	Cannot collect readings									
B	6/22/2023	4	43.7	15.9	2.9	37.5	-0.3	0.013	10.0	N/C	10% Open	10% Open
B	7/27/2023	4	78.0	17.4	0.4	4.2	0.0	0.069	23.1	N/C	10% Open	10% Open
B	8/30/2023	4	67.9	16.8	0.2	15.4	-0.5	0.016	11.1	N/C	9% Open (1 T)	9% Open (1 T)
B	9/21/2023	4	Cannot collect readings									
B	10/24/2023	4	Cannot collect readings									
B	11/28/2023	4	Cannot collect readings									
B	12/27/2023	4	Cannot collect readings									
B	1/30/2023	5	47.9	21.6	0.0	30.5	-0.9	0.009	8.4	N/C	100% Open	100% Open
B	2/21/2023	5	Cannot collect readings									
B	3/17/2023	5	Cannot collect readings									
B	4/27/2023	5	Cannot collect readings									
B	6/1/2023	5	Cannot collect readings									
B	6/28/2023	5	76.9	23.0	0.0	0.1	-0.4	0.059	-	N/C	100% Open	100% Open
B	7/27/2023	5	78.9	21.0	0.0	0.1	0.0	0.063	22.1	N/C	100% Open	100% Open
B	8/30/2023	5	78.3	21.6	0.0	0.1	-0.5	0.000	0.0	N/C	100% Open	100% Open
B	9/21/2023	5	Cannot collect readings									
B	10/24/2023	5	Cannot collect readings									
B	11/28/2023	5	Cannot collect readings									
B	12/27/2023	5	Cannot collect readings									
B	1/30/2023	6	41.9	20.1	0.0	38.9	-0.9	0.007	7.4	N/C	100% Open	100% Open
B	2/21/2023	6	Cannot collect readings									
B	3/17/2023	6	Cannot collect readings									
B	4/27/2023	6	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
B	6/1/2023	6	Cannot collect readings									
B	6/22/2023	6	73.9	21.5	0.0	4.6	-0.3	0.009	8.4	N/C	100% Open	100% Open
B	7/27/2023	6	77.2	22.7	0.0	0.1	0.0	0.069	23.1	N/C	100% Open	100% Open
B	8/30/2023	6	77.8	22.1	0.0	0.1	-0.8	-0.005	0.0	N/C	100% Open	100% Open
B	9/21/2023	6	Cannot collect readings									
B	10/24/2023	6	Cannot collect readings									
B	11/28/2023	6	Cannot collect readings									
B	12/27/2023	6	Cannot collect readings									
B	1/30/2023	7	Cannot collect readings									
B	2/21/2023	7	63.0	16.2	0.9	19.9	0.0	0.014	10.4	N/C	100% Open	100% Open
B	3/17/2023	7	Cannot collect readings									
B	4/27/2023	7	Cannot collect readings									
B	6/1/2023	7	Cannot collect readings									
B	6/22/2023	7	64.8	14.9	0.0	20.3	-0.3	0.008	7.9	N/C	100% Open	100% Open
B	7/27/2023	7	85.5	14.4	0.0	0.1	0.0	0.068	23.0	N/C	100% Open	100% Open
B	8/30/2023	7	85.7	14.2	0.0	0.1	-0.4	0.001	2.8	N/C	100% Open (11.5 T)	100% Open (11.5 T)
B	9/21/2023	7	Cannot collect readings									
B	10/24/2023	7	Cannot collect readings									
B	11/28/2023	7	Cannot collect readings									
B	12/27/2023	7	Cannot collect readings									
B	1/30/2023	8	45.1	16.3	0.1	38.5	-1.4	0.003	4.8	N/C	100% Open	100% Open
B	2/21/2023	8	Cannot collect readings									
B	3/17/2023	8	Cannot collect readings									
B	4/27/2023	8	Cannot collect readings									
B	6/1/2023	8	Cannot collect readings									
B	7/7/2023	8	85.6	13.2	0.5	0.7	0.1	0.031	15.5	N/C	100% Open	100% Open
B	7/27/2023	8	86.5	13.4	0.0	0.1	0.1	0.064	22.3	N/C	100% Open	100% Open
B	8/30/2023	8	86.7	13.2	0.0	0.1	-0.7	0.001	2.8	N/C	100% Open	100% Open
B	9/21/2023	8	Cannot collect readings									
B	10/24/2023	8	Cannot collect readings									
B	11/28/2023	8	Cannot collect readings									
B	12/27/2023	8	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
C	1/30/2023	9	Cannot collect readings									
C	2/21/2023	9	73.9	24.1	1.9	0.1	0.0	0.012	9.7	N/C	5% Open	5% Open
C	3/17/2023	9	Cannot collect readings									
C	4/27/2023	9	Cannot collect readings									
C	6/1/2023	9	78.6	21.2	0.1	0.1	0.1	0.045	18.7	N/C	5% Open	5% Open
C	7/7/2023	9	Cannot collect readings									
C	7/27/2023	9	77.4	22.5	0.0	0.1	-0.1	0.070	23.3	N/C	5% Open	5% Open
C	8/30/2023	9	75.0	24.7	0.2	0.1	0.0	0.050	19.7	N/C	27.5% Open	25% Open
C	9/21/2023	9	Cannot collect readings									
C	10/24/2023	9	Cannot collect readings									
C	11/28/2023	9	Cannot collect readings									
C	12/27/2023	9	Cannot collect readings									
C	1/30/2023	10	Cannot collect readings									
C	2/21/2023	10	71.6	24.6	1.9	1.9	0.0	0.018	11.8	N/C	20% Open	20% Open
C	3/17/2023	10	Cannot collect readings									
C	4/27/2023	10	Cannot collect readings									
C	6/1/2023	10	74.8	25.1	0.0	0.1	-0.2	0.041	-	-	25% Open	20% Open
C	7/7/2023	10	Cannot collect readings									
C	7/27/2023	10	74.7	25.2	0.0	0.1	0.0	0.068	23.0	N/C	20% Open	20% Open
C	8/30/2023	10	73.5	26.3	0.0	0.2	-0.2	0.054	20.5	N/C	25% Open	20% Open
C	9/21/2023	10	Cannot collect readings									
C	10/24/2023	10	Cannot collect readings									
C	11/28/2023	10	Cannot collect readings									
C	12/27/2023	10	Cannot collect readings									
D	1/30/2023	11	Cannot collect readings									
D	2/21/2023	11	Cannot collect readings									
D	3/17/2023	11	Cannot collect readings									
D	4/27/2023	11	Cannot collect readings									
D	6/1/2023	11	62.7	22.0	0.0	15.3	-0.1	0.045	18.7	N/C	10% Open	10% Open
D	7/7/2023	11	Cannot collect readings									
D	7/27/2023	11	74.2	24.6	0.0	1.2	-2.3	0.137	32.6	N/C	10% Open	10% Open
D	8/30/2023	11	74.0	25.7	0.1	0.2	-0.1	0.044	18.5	N/C	25% Open	20% Open

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
D	9/21/2023	11	Cannot collect readings									
D	10/24/2023	11	Cannot collect readings									
D	11/28/2023	11	Cannot collect readings									
D	12/27/2023	11	Cannot collect readings									
D	1/30/2023	12	Cannot collect readings									
D	2/21/2023	12	Cannot collect readings									
D	3/17/2023	12	Cannot collect readings									
D	4/27/2023	12	Cannot collect readings									
D	6/1/2023	12	75.1	24.8	0.0	0.1	-0.2	0.041	17.8	N/C	50% Open	50% Open
D	7/7/2023	12	Cannot collect readings									
D	7/27/2023	12	74.7	25.2	0.0	0.1	0.3	0.144	33.4	N/C	50% Open	50% Open
D	8/30/2023	12	73.3	26.3	0.2	0.1	-0.3	0.693	73.3	N/C	50% Open	50% Open
D	9/21/2023	12	Cannot collect readings									
D	10/24/2023	12	Cannot collect readings									
D	11/28/2023	12	Cannot collect readings									
D	12/27/2023	12	Cannot collect readings									
D	1/30/2023	13	Cannot collect readings									
D	2/21/2023	13	Cannot collect readings									
D	3/17/2023	13	Cannot collect readings									
D	4/27/2023	13	Cannot collect readings									
D	6/1/2023	13	83.9	16.1	0.0	0.0	0.4	0.001	2.8	N/C	100% Open	100% Open
D	6/22/2023	13	83.5	16.4	0.0	0.1	0.3	0.011	9.2	N/C	100% Open	100% Open
D	7/27/2023	13	83.5	16.4	0.0	0.1	0.8	-0.088	0.0	N/C	100% Open	100% Open
D	8/30/2023	13	82.1	17.9	0.0	0.0	0.3	0.006	6.8	N/C	100% Open	100% Open
D	9/21/2023	13	Cannot collect readings									
D	10/24/2023	13	Cannot collect readings									
D	11/28/2023	13	Cannot collect readings									
D	12/27/2023	13	Cannot collect readings									
None	1/30/2023	14	62.9	20.3	0.0	16.8	-1.1	0.346	51.8	N/C	85% Open	85% Open
None	2/21/2023	14	Cannot collect readings									
None	3/17/2023	14	Cannot collect readings									
None	4/27/2023	14	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
None	6/1/2023	14	Cannot collect readings									
None	6/30/2023	14	40.9	14.5	0.4	49.2	-0.1	0.367	53.4	N/C	85% Open	85% Open
None	7/27/2023	14	85.0	14.2	0.0	0.8	0.0	0.003	4.8	N/C	85% Open	85% Open
None	8/30/2023	14	86.0	13.9	0.0	0.1	-0.4	0.002	3.9	N/C	95% Open (10 T)	90% Open (9.5 T)
None	9/21/2023	14	Cannot collect readings									
None	10/24/2023	14	Cannot collect readings									
None	11/28/2023	14	Cannot collect readings									
None	12/27/2023	14	Cannot collect readings									
E	1/30/2023	15	43.1	17.0	4.8	35.1	-1.2	0.003	4.8	N/C	80% Open	80% Open
E	2/21/2023	15	Cannot collect readings									
E	3/17/2023	15	Cannot collect readings									
E	4/27/2023	15	Cannot collect readings									
E	6/1/2023	15	72.1	21.5	0.0	6.4	-0.2	0.031	15.5		80% Open	80% Open
E	7/7/2023	15	Cannot collect readings									
E	7/27/2023	15	77.5	22.4	0.0	0.1	0.0	0.063	22.1	N/C	80% Open	80% Open
E	8/30/2023	15	76.3	26.3	0.3	0.1	-0.2	0.038	17.2	N/C	80% Open	80% Open
E	9/21/2023	15	Cannot collect readings									
E	10/24/2023	15	Cannot collect readings									
E	11/28/2023	15	Cannot collect readings									
E	12/27/2023	15	Cannot collect readings									
E	1/30/2023	16	Cannot collect readings									
E	2/21/2023	16	Cannot collect readings									
E	3/17/2023	16	Cannot collect readings									
E	4/27/2023	16	Cannot collect readings									
E	6/1/2023	16	67.1	13.2	0.1	19.6	-0.3	0.02	12.5	N/C	52% Open	52% Open
E	6/22/2023	16	62.1	13.0	0.5	24.4	-0.3	0.011	9.2	N/C	52% Open	52% Open
E	7/27/2023	16	87.9	11.7	0.0	0.4	-2.4	0.068	23.0	N/C	52% Open	52% Open
E	8/30/2023	16	88.3	11.6	0.0	0.1	-0.3	0.001	2.8	N/C	100% Open	100% Open
E	9/21/2023	16	Cannot collect readings									
E	10/24/2023	16	Cannot collect readings									
E	11/28/2023	16	Cannot collect readings									
E	12/27/2023	16	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
E	1/30/2023	17	29.0	5.7	14.1	51.2	-1.2	0.003	4.8	N/C	45% Open	45% Open
E	2/21/2023	17	Cannot collect readings									
E	3/17/2023	17	Cannot collect readings									
E	4/27/2023	17	Cannot collect readings									
E	6/1/2023	17	48.2	6.3	9.0	36.5	-0.1	0.062	21.9	N/C	45% Open	45% Open
E	6/22/2023	17	42.3	6.4	9.8	41.5	-0.3	0.009	8.4	N/C	45% Open	45% Open
E	7/27/2023	17	54.2	6.9	7.3	31.6	0.0	0.072	23.6	N/C	45% Open	45% Open
E	8/30/2023	17	77.9	9.8	2.6	9.7	-0.3	-0.007	0.0	N/C	45% Open	45% Open
E	9/21/2023	17	Cannot collect readings									
E	10/24/2023	17	Cannot collect readings									
E	11/28/2023	17	Cannot collect readings									
E	12/27/2023	17	Cannot collect readings									
E	1/30/2023	18	Cannot collect readings									
E	2/21/2023	18	Cannot collect readings									
E	3/17/2023	18	Cannot collect readings									
E	4/27/2023	18	Cannot collect readings									
E	6/1/2023	18	Cannot collect readings									
E	6/22/2023	18	69.2	11.7	0.5	18.6	-0.2	-	-	Broken	100% Open	100% Open
E	7/27/2023	18	88.5	11.3	0.0	0.2	0.0	-	-	N/C	100% Open	100% Open
E	8/30/2023	18	88.6	11.2	0.1	0.1	-0.5	-	-	N/C	100% Open	100% Open
E	9/21/2023	18	Cannot collect readings									
E	10/24/2023	18	Cannot collect readings									
E	11/28/2023	18	Cannot collect readings									
E	12/27/2023	18	Cannot collect readings									
F	1/30/2023	19	Cannot collect readings									
F	2/21/2023	19	Cannot collect readings									
F	3/17/2023	19	Cannot collect readings									
F	4/27/2023	19	Cannot collect readings									
F	6/1/2023	19	77.0	21.5	0.1	1.4	-0.1	-	-	Broken	50% Open	50% Open
F	7/7/2023	19	Cannot collect readings									
F	7/27/2023	19	78.8	21.1	0.0	0.1	0.1	-	-	N/C	50% Open	50% Open
F	8/30/2023	19	77.6	21.6	0.7	0.1	0.0	-	-	N/C	50% Open	50% Open

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
F	9/21/2023	19	Cannot collect readings									
F	10/24/2023	19	Cannot collect readings									
F	11/28/2023	19	Cannot collect readings									
F	12/27/2023	19	Cannot collect readings									
F	1/30/2023	20	Cannot collect readings									
F	2/21/2023	20	Cannot collect readings									
F	3/17/2023	20	Cannot collect readings									
F	4/27/2023	20	Cannot collect readings									
F	6/1/2023	20	71.1	22.7	0.7	5.5	-0.1	-	-	Broken	50% Open	50% Open
F	7/7/2023	20	Cannot collect readings									
F	7/27/2023	20	76.3	23.6	0.0	0.1	0.0	-	-	N/C	50% Open	50% Open
F	8/30/2023	20	72.2	26.4	1.3	0.1	0.0	-	-	N/C	50% Open	50% Open
F	9/21/2023	20	Cannot collect readings									
F	10/24/2023	20	Cannot collect readings									
F	11/28/2023	20	Cannot collect readings									
F	12/27/2023	20	Cannot collect readings									
F	1/30/2023	21	80.7	15.8	3.3	0.2	-0.7	0.009	8.4	N/C	100% Open	100% Open
F	2/21/2023	21	Cannot collect readings									
F	3/17/2023	21	Cannot collect readings									
F	4/27/2023	21	Cannot collect readings									
F	6/1/2023	21	47.9	7.2	8.8	37.1	0.0	0.065	22.5	N/C	100% Open	100% Open
F	6/22/2023	21	42.6	6.7	9.5	41.2	0.0	0.017	11.5	N/C	100% Open	100% Open
F	7/27/2023	21	87.7	12.2	0.0	0.1	-0.1	0.077	24.4	N/C	100% Open	100% Open
F	8/30/2023	21	87.7	12.2	0.0	0.1	0.0	0.005	6.2	N/C	100% Open	100% Open
F	9/21/2023	21	Cannot collect readings									
F	10/24/2023	21	Cannot collect readings									
F	11/28/2023	21	Cannot collect readings									
F	12/27/2023	21	Cannot collect readings									
F	1/30/2023	22	Cannot collect readings									
F	2/21/2023	22	Cannot collect readings									
F	3/17/2023	22	Cannot collect readings									
F	4/27/2023	22	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
F	6/1/2023	22	72.6	23.3	0.1	4.0	0.1	0.065	22.5	N/C	25% Open	25% Open
F	6/22/2023	22	71.4	24.1	0.9	3.6	0.0	0.015	10.8	N/C	25% Open	25% Open
F	7/27/2023	22	75.0	23.9	0.8	0.3	0.3	0.052	20.1	N/C	25% Open	25% Open
F	8/30/2023	22	77.0	22.9	0.0	0.1	0.1	0.073	23.8	N/C	27.5% Open	25% Open
F	9/21/2023	22	Cannot collect readings									
F	10/24/2023	22	Cannot collect readings									
F	11/28/2023	22	Cannot collect readings									
F	12/27/2023	22	Cannot collect readings									
F	1/30/2023	23	Cannot collect readings									
F	2/21/2023	23	Cannot collect readings									
F	3/17/2023	23	Cannot collect readings									
F	4/27/2023	23	Cannot collect readings									
F	6/1/2023	23	78.2	21.7	0.0	0.1	0.1	-0.002	0.0	N/C	5% Open	5% Open
F	6/22/2023	23	77.4	22.1	0.3	0.2	0.1	-	-	Broken	5% Open	5% Open
F	7/27/2023	23	78.7	21.3	0.0	0.0	0.3	0.189	38.3	N/C	5% Open	5% Open
F	8/30/2023	23	78.4	21.5	0.0	0.1	0.0	-	-	N/C	5% Open	5% Open
F	9/21/2023	23	Cannot collect readings									
F	10/24/2023	23	Cannot collect readings									
F	11/28/2023	23	Cannot collect readings									
F	12/27/2023	23	Cannot collect readings									
G	1/30/2023	24	60.8	17.8	0.5	20.9	-1.1	0.002	3.9	N/C	100% Open	100% Open
G	2/21/2023	24	Cannot collect readings									
G	3/17/2023	24	Cannot collect readings									
G	4/27/2023	24	Cannot collect readings									
G	6/1/2023	24	83.9	16.0	0.0	0.1	-0.1	0.066	22.6	N/C	100% Open	100% Open
G	6/22/2023	24	82.8	16.4	0.2	0.6	-0.2	0.006	6.8	N/C	100% Open	100% Open
G	7/27/2023	24	84.8	15.1	0.0	0.1	0.0	0.070	23.3	N/C	100% Open	100% Open
G	8/30/2023	24	84.6	15.3	0.0	0.0	-0.2	0.015	10.8	N/C	100% Open	100% Open
G	9/21/2023	24	Cannot collect readings									
G	10/24/2023	24	Cannot collect readings									
G	11/28/2023	24	Cannot collect readings									
G	12/27/2023	24	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
G	1/30/2023	25	Cannot collect readings									
G	2/21/2023	25	Cannot collect readings									
G	3/17/2023	25	Cannot collect readings									
G	4/27/2023	25	Cannot collect readings									
G	6/1/2023	25	Cannot collect readings									
G	6/30/2023	25	85.1	14.4	0.3	0.2	-0.1	0.068	23.0	N/C	100% Open	100% Open
G	7/27/2023	25	88.9	14.0	0.0	0.1	0.0	0.077	24.4	N/C	100% Open	100% Open
G	8/30/2023	25	86.1	13.9	0.0	0.0	-0.5	0.005	6.2	N/C	100% Open	100% Open
G	9/21/2023	25	Cannot collect readings									
G	10/24/2023	25	Cannot collect readings									
G	11/28/2023	25	Cannot collect readings									
G	12/27/2023	25	Cannot collect readings									
G	1/30/2023	26	Cannot collect readings									
G	2/21/2023	26	Cannot collect readings									
G	3/17/2023	26	Cannot collect readings									
G	4/27/2023	26	Cannot collect readings									
G	6/1/2023	26	Cannot collect readings									
G	6/30/2023	26	82.5	17.4	0.0	0.1	-0.1	0.087	26.0	N/C	100% Open	100% Open
G	7/27/2023	26	83.6	16.3	0.0	0.1	0.0	0.017	11.5	N/C	100% Open	100% Open
G	8/30/2023	26	Cannot collect readings									
G	9/21/2023	26	Cannot collect readings									
G	10/24/2023	26	Cannot collect readings									
G	11/28/2023	26	Cannot collect readings									
G	12/27/2023	26	Cannot collect readings									
G	1/30/2023	27	Cannot collect readings									
G	2/21/2023	27	Cannot collect readings									
G	3/17/2023	27	Cannot collect readings									
G	4/27/2023	27	Cannot collect readings									
G	6/1/2023	27	Cannot collect readings									
G	7/7/2023	27	68.3	20.9	4.4	9.4	0.0	-	-	N/C	0% Open	0% Open
G	7/27/2023	27	72.9	21.7	0.0	5.4	0.0	-	-	N/C	0% Open	0% Open
G	8/30/2023	27	Cannot collect readings						-			

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
G	9/21/2023	27	Cannot collect readings									
G	10/24/2023	27	Cannot collect readings									
G	11/28/2023	27	Cannot collect readings									
G	12/27/2023	27	Cannot collect readings									
G	1/30/2023	28	Cannot collect readings									
G	2/21/2023	28	Cannot collect readings									
G	3/17/2023	28	Cannot collect readings									
G	4/27/2023	28	Cannot collect readings									
G	6/1/2023	28	Cannot collect readings									
G	7/7/2023	28	75.3	17.6	2.4	4.7	-0.2	0.000	0.0	N/C	25% Open	25% Open
G	7/27/2023	28	75.7	17.7	0.0	6.6	-0.1	0.006	6.8	N/C	25% Open	25% Open
G	8/30/2023	28	77.3	18.0	0.0	4.7	-0.4	0.035	16.5	N/C	30% Open	25% Open
G	9/21/2023	28	Cannot collect readings									
G	10/24/2023	28	Cannot collect readings									
G	11/28/2023	28	Cannot collect readings									
G	12/27/2023	28	Cannot collect readings									
G	1/30/2023	29	85.0	11.4	0.5	3.1	-1.0	0.006	6.8	N/C	100% Open	100% Open
G	2/21/2023	29	Cannot collect readings									
G	3/17/2023	29	Cannot collect readings									
G	4/27/2023	29	Cannot collect readings									
G	6/1/2023	29	Cannot collect readings									
G	6/22/2023	29	91.5	8.4	0.0	0.1	-0.2	0.002	3.9	N/C	100% Open	100% Open
G	7/27/2023	29	93.8	6.1	0.0	0.1	-0.1	0.011	9.2	N/C	100% Open	100% Open
G	8/30/2023	29	93.7	6.2	0.0	0.1	-0.4	0.047	19.1	N/C	100% Open	100% Open
G	9/21/2023	29	Cannot collect readings									
G	10/24/2023	29	Cannot collect readings									
G	11/28/2023	29	Cannot collect readings									
G	12/27/2023	29	Cannot collect readings									
H	1/30/2023	30	65.1	19.4	0.4	18.1	-1.1	0.008	7.9	N/C	100% Open	100% Open
H	2/21/2023	30	Cannot collect readings									
H	3/17/2023	30	Cannot collect readings									
H	4/27/2023	30	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
H	6/1/2023	30	Cannot collect readings									
H	6/30/2023	30	59.3	17.1	0.0	23.6	-0.1	0.095	27.2	N/C	100% Open	100% Open
H	7/27/2023	30	85.9	13.1	0.0	1.0	-0.1	0.016	11.1	N/C	100% Open	100% Open
H	8/30/2023	30	87.2	12.4	0.2	0.2	-0.4	0.009	8.4	N/C	79% Open (8.25 T)	74% Open (7.75 T)
H	9/21/2023	30	Cannot collect readings									
H	10/24/2023	30	Cannot collect readings									
H	11/28/2023	30	Cannot collect readings									
H	12/27/2023	30	Cannot collect readings									
H	1/30/2023	31	Cannot collect readings									
H	2/21/2023	31	Cannot collect readings									
H	3/17/2023	31	Cannot collect readings									
H	4/27/2023	31	Cannot collect readings									
H	6/1/2023	31	Cannot collect readings									
H	7/7/2023	31	76.5	22.4	0.2	0.9	-0.3	-	-	N/C	10% Open	10% Open
H	7/27/2023	31	77.0	22.9	0.0	0.1	0.0	-	-	N/C	10% Open	10% Open
H	8/30/2023	31	74.9	24.9	0.1	0.1	-0.5	-	-	N/C	10% Open	10% Open
H	9/21/2023	31	Cannot collect readings									
H	10/24/2023	31	Cannot collect readings									
H	11/28/2023	31	Cannot collect readings									
H	12/27/2023	31	Cannot collect readings									
H	1/30/2023	32	78.7	18.1	0.4	2.8	-1.0	0.001	2.8	N/C	100% Open	100% Open
H	2/21/2023	32	Cannot collect readings									
H	3/17/2023	32	Cannot collect readings									
H	4/27/2023	32	Cannot collect readings									
H	6/1/2023	32	Cannot collect readings									
H	6/22/2023	32	71.0	11.6	0.3	17.1	-0.2	0.006	6.8	N/C	100% Open	100% Open
H	7/27/2023	32	90.8	9.1	0.0	0.1	0.0	0.005	6.2	N/C	100% Open	100% Open
H	8/30/2023	32	91.3	8.6	0.0	0.1	-0.3	0.005	6.2	N/C	100% Open	100% Open
H	9/21/2023	32	Cannot collect readings									
H	10/24/2023	32	Cannot collect readings									
H	11/28/2023	32	Cannot collect readings									
H	12/27/2023	32	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
H	1/30/2023	33	Cannot collect readings									
H	2/21/2023	33	Cannot collect readings									
H	3/17/2023	33	Cannot collect readings									
H	4/27/2023	33	Cannot collect readings									
H	6/1/2023	33	Cannot collect readings									
H	7/7/2023	33	76.7	21.4	6.0	1.9	0.0	0.023	13.4	N/C	30% Open	30% Open
H	7/27/2023	33	75.1	21.7	0.0	3.2	0.0	0.027	14.5	N/C	30% Open	30% Open
H	8/30/2023	33	76.9	23.0	0.0	0.1	-0.1	0.041	17.8	N/C	35% Open	30% Open
H	9/21/2023	33	Cannot collect readings									
H	10/24/2023	33	Cannot collect readings									
H	11/28/2023	33	Cannot collect readings									
H	12/27/2023	33	Cannot collect readings									
H	1/30/2023	34	Cannot collect readings									
H	2/21/2023	34	Cannot collect readings									
H	3/17/2023	34	Cannot collect readings									
H	4/27/2023	34	Cannot collect readings									
H	6/1/2023	34	Cannot collect readings									
H	7/7/2023	34	71.9	27.9	0.0	0.2	0.3	-	-	N/C	100% Open	100% Open
H	7/27/2023	34	71.4	28.5	0.0	0.1	0.0	-	-	N/C	100% Open	100% Open
H	8/30/2023	34	71.2	28.5	0.0	0.1	-0.5	-	-	N/C	100% Open	100% Open
H	9/21/2023	34	Cannot collect readings									
H	10/24/2023	34	Cannot collect readings									
H	11/28/2023	34	Cannot collect readings									
H	12/27/2023	34	Cannot collect readings									
H	1/30/2023	35	Cannot collect readings									
H	2/21/2023	35	Cannot collect readings									
H	3/17/2023	35	Cannot collect readings									
H	4/27/2023	35	Cannot collect readings									
H	6/1/2023	35	Cannot collect readings									
H	7/7/2023	35	73.0	22.6	0.0	4.4	0.2	0.023	13.4	N/C	22% Open	22% Open
H	7/27/2023	35	74.8	23.2	0.0	2.0	-42.6	0.002	3.9	N/C	22% Open	22% Open
H	8/30/2023	35	76.1	23.8	0.0	0.1	-0.4	0.003	4.8	N/C	25% Open	22.5% Open

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
H	9/21/2023	35	Cannot collect readings									
H	10/24/2023	35	Cannot collect readings									
H	11/28/2023	35	Cannot collect readings									
H	12/27/2023	35	Cannot collect readings									
I	1/30/2023	36	Cannot collect readings									
I	2/21/2023	36	Cannot collect readings									
I	3/17/2023	36	Cannot collect readings									
I	4/27/2023	36	Cannot collect readings									
I	6/1/2023	36	Cannot collect readings									
I	6/28/2023	36	82.5	17.4	0.0	0.1	-0.4	0.078	24.6	N/C	100% Open	100% Open
I	7/27/2023	36	82.6	17.3	0.0	0.1	0.0	0.061	21.8	N/C	100% Open	100% Open
I	8/30/2023	36	81.6	18.3	0.0	0.1	-0.5	0.002	3.9	N/C	100% Open	100% Open
I	9/21/2023	36	Cannot collect readings									
I	10/24/2023	36	Cannot collect readings									
I	11/28/2023	36	Cannot collect readings									
I	12/27/2023	36	Cannot collect readings									
I	1/30/2023	37	Cannot collect readings									
I	2/21/2023	37	Cannot collect readings									
I	3/17/2023	37	Cannot collect readings									
I	4/27/2023	37	Cannot collect readings									
I	6/1/2023	37	Cannot collect readings									
I	6/28/2023	37	60.2	29.0	2.5	8.3	0.1	-	-	N/C	5% Open	5% Open
I	7/27/2023	37	67.5	32.4	0.0	0.1	0.8	-	-	N/C	5% Open	5% Open
I	8/30/2023	37	67.7	32.2	0.0	0.1	0.4	-	-	N/C	5% Open	5% Open
I	9/21/2023	37	Cannot collect readings									
I	10/24/2023	37	Cannot collect readings									
I	11/28/2023	37	Cannot collect readings									
I	12/27/2023	37	Cannot collect readings									
I	1/30/2023	38	Cannot collect readings									
I	2/21/2023	38	Cannot collect readings									
I	3/17/2023	38	Cannot collect readings									
I	4/27/2023	38	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
I	6/1/2023	38	Cannot collect readings									
I	6/28/2023	38	75.4	21.9	0.0	2.7	0.1	-	-	N/C	100% Open	100% Open
I	7/27/2023	38	74.6	25.3	0.0	0.1	-0.1	-	-	N/C	100% Open	100% Open
I	8/30/2023	38	74.3	25.6	0.0	0.1	0.5	-	-	N/C	100% Open	100% Open
I	9/21/2023	38	Cannot collect readings									
I	10/24/2023	38	Cannot collect readings									
I	11/28/2023	38	Cannot collect readings									
I	12/27/2023	38	Cannot collect readings									
I	1/30/2023	39	Cannot collect readings									
I	2/21/2023	39	Cannot collect readings									
I	3/17/2023	39	Cannot collect readings									
I	4/27/2023	39	Cannot collect readings									
I	6/1/2023	39	Cannot collect readings									
I	6/28/2023	39	76.7	21.8	0.0	1.5	0.1	-	-	N/C	30% Open	30% Open
I	7/27/2023	39	74.2	21.3	0.0	4.5	0.7	0.059	21.4	N/C	30% Open	30% Open
I	8/30/2023	39	78.0	21.8	0.0	0.2	0.5	-	-	N/C	30% Open	30% Open
I	9/21/2023	39	Cannot collect readings									
I	10/24/2023	39	Cannot collect readings									
I	11/28/2023	39	Cannot collect readings									
I	12/27/2023	39	Cannot collect readings									
I	1/30/2023	40	78.9	20.9	0.0	0.2	N/C	-	-	Broken	100% Open	100% Open
I	2/21/2023	40	Cannot collect readings									
I	3/17/2023	40	Cannot collect readings									
I	4/27/2023	40	Cannot collect readings									
I	6/1/2023	40	Cannot collect readings									
I	6/28/2023	40	76.4	22.5	1.0	0.1	0.1	-	-	N/C	100% Open	100% Open
I	7/27/2023	40	79.8	20.1	0.0	0.1	0.1	-	-	N/C	100% Open	100% Open
I	8/30/2023	40	78.3	21.6	0.0	0.1	0.6	-	-	N/C	100% Open	100% Open
I	9/21/2023	40	Cannot collect readings									
I	10/24/2023	40	Cannot collect readings									
I	11/28/2023	40	Cannot collect readings									
I	12/27/2023	40	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
I	1/30/2023	41	32.6	7.7	9.6	50.1	N/C	-	-	Broken	50% Open	50% Open
I	2/21/2023	41	Cannot collect readings									
I	3/17/2023	41	Cannot collect readings									
I	4/27/2023	41	Cannot collect readings									
I	6/1/2023	41	Cannot collect readings									
I	6/28/2023	41	51.5	11.5	5.4	31.6	0.1	-	-	N/C	50% Open	50% Open
I	7/27/2023	41	83.5	15.6	0.0	0.9	0.3	-	-	N/C	50% Open	50% Open
I	8/30/2023	41	83.6	15.4	0.0	1.0	0.8	-	-	N/C	50% Open	50% Open
I	9/21/2023	41	Cannot collect readings									
I	10/24/2023	41	Cannot collect readings									
I	11/28/2023	41	Cannot collect readings									
I	12/27/2023	41	Cannot collect readings									
I	1/30/2023	42	Cannot collect readings									
I	2/21/2023	42	Cannot collect readings									
I	3/17/2023	42	Cannot collect readings									
I	4/27/2023	42	Cannot collect readings									
I	6/1/2023	42	Cannot collect readings									
I	6/28/2023	42	69.7	21.0	0.4	8.9	0.1	-	-	N/C	50% Open	50% Open
I	7/27/2023	42	80.1	16.8	0.0	3.1	1.2	-	-	N/C	50% Open	50% Open
I	8/30/2023	42	79.8	21.1	0.0	0.1	0.8	-	-	N/C	50% Open	50% Open
I	9/21/2023	42	Cannot collect readings									
I	10/24/2023	42	Cannot collect readings									
I	11/28/2023	42	Cannot collect readings									
I	12/27/2023	42	Cannot collect readings									
J	1/30/2023	43	85.7	14.2	0.0	0.2	0.0	0.022	13.1	N/C	100% Open	100% Open
J	2/21/2023	43	Cannot collect readings									
J	3/17/2023	43	Cannot collect readings									
J	4/27/2023	43	Cannot collect readings									
J	6/1/2023	43	Cannot collect readings									
J	6/28/2023	43	83.6	16.3	0.0	0.1	0.2	0.040	17.6	N/C	100% Open	100% Open
J	7/27/2023	43	85.1	14.8	0.0	0.1	1.4	0.069	23.1	N/C	100% Open	100% Open
J	8/30/2023	43	84.9	15.0	0.0	0.1	0.9	0.003	4.8	N/C	100% Open	100% Open

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
J	9/21/2023	43	Cannot collect readings									
J	10/24/2023	43	Cannot collect readings									
J	11/28/2023	43	Cannot collect readings									
J	12/27/2023	43	Cannot collect readings									
J	1/30/2023	44	Cannot collect readings									
J	2/21/2023	44	Cannot collect readings									
J	3/17/2023	44	Cannot collect readings									
J	4/27/2023	44	Cannot collect readings									
J	6/1/2023	44	Cannot collect readings									
J	6/28/2023	44	70.8	12.6	2.8	13.9	0.1	-	-	N/C	30% Open	30% Open
J	7/27/2023	44	85.4	14.5	0.0	0.1	0.1	-	-	N/C	30% Open	30% Open
J	8/30/2023	44	85.0	14.0	0.0	0.1	0.8	-	-	N/C	30% Open	30% Open
J	9/21/2023	44	Cannot collect readings									
J	10/24/2023	44	Cannot collect readings									
J	11/28/2023	44	Cannot collect readings									
J	12/27/2023	44	Cannot collect readings									
J	1/30/2023	45	Cannot collect readings									
J	2/21/2023	45	Cannot collect readings									
J	3/17/2023	45	Cannot collect readings									
J	4/27/2023	45	Cannot collect readings									
J	6/1/2023	45	Cannot collect readings									
J	6/28/2023	45	65.8	17.1	0.9	16.2	0.1	-	-	N/C		
J	7/27/2023	45	71.8	17.7	0.0	10.5	0.1	-	-	N/C		
J	8/30/2023	45	76.6	18.3	0.0	5.0	0.7	-	-	N/C	5% Open	5% Open
J	9/21/2023	45	Cannot collect readings									
J	10/24/2023	45	Cannot collect readings									
J	11/28/2023	45	Cannot collect readings									
J	12/27/2023	45	Cannot collect readings									
J	1/30/2023	46	Cannot collect readings									
J	2/21/2023	46	Cannot collect readings									
J	3/17/2023	46	Cannot collect readings									
J	4/27/2023	46	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
J	6/1/2023	46	75.3	24.6	0.0	0.1	-0.1	0.059	21.4	N/C	25% Open	25% Open
J	6/28/2023	46	74.7	25.3	0.0	0.0	-0.4	0.076	24.3	N/C	25% Open	25% Open
J	7/27/2023	46	74.4	25.5	0.0	0.1	-1.6	0.085	25.7	N/C	25% Open	25% Open
J	8/30/2023	46	73.5	26.3	0.0	0.2	-0.1	0.058	21.2	N/C	27.5% Open	25% Open
J	9/21/2023	46	Cannot collect readings									
J	10/24/2023	46	Cannot collect readings									
J	11/28/2023	46	Cannot collect readings									
J	12/27/2023	46	Cannot collect readings									
J	1/30/2023	47	Cannot collect readings									
J	2/21/2023	47	Cannot collect readings									
J	3/17/2023	47	Cannot collect readings									
J	4/27/2023	47	Cannot collect readings									
J	6/1/2023	47	65.9	23.3	0.0	10.8	-0.1	0.054	20.5	N/C	15% Open	15% Open
J	6/28/2023	47	73.8	26.1	0.0	0.1	-0.4	0.074	24.0	N/C	15% Open	15% Open
J	7/27/2023	47	70.7	27.1	0.0	2.2	0.1	0.080	24.9	N/C	15% Open	15% Open
J	8/30/2023	47	71.1	28.8	0.0	0.1	0.0	0.056	20.9	N/C	13% Open (1.5 T)	11% Open (1.25 T)
J	9/21/2023	47	Cannot collect readings									
J	10/24/2023	47	Cannot collect readings									
J	11/28/2023	47	Cannot collect readings									
J	12/27/2023	47	Cannot collect readings									
L	1/30/2023	48	Cannot collect readings									
L	2/21/2023	48	Cannot collect readings									
L	3/17/2023	48	Cannot collect readings									
L	4/27/2023	48	Cannot collect readings									
L	6/1/2023	48	37.5	9.9	8.7	43.9	0.0	0.059	21.4	N/C	8% Open	8% Open
L	7/7/2023	48	Cannot collect readings									
L	7/27/2023	48	82.7	17.2	0.0	0.1	0.0	0.071	23.5	N/C	8% Open	8% Open
L	8/30/2023	48	82.2	17.7	0.0	0.1	0.0	0.590	67.7	N/C	10% Open	8% Open
L	9/21/2023	48	Cannot collect readings									
L	10/24/2023	48	Cannot collect readings									
L	11/28/2023	48	Cannot collect readings									
L	12/27/2023	48	Cannot collect readings									

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
L	1/30/2023	49	Cannot collect readings									
L	2/21/2023	49	Cannot collect readings									
L	3/17/2023	49	Cannot collect readings									
L	4/27/2023	49	Cannot collect readings									
L	6/1/2023	49	75.0	24.9	0.0	0.1	0.1	0.051	19.9	N/C	0% Open	0% Open
L	7/7/2023	49	Cannot collect readings									
L	7/27/2023	49	74.6	25.2	0.0	0.2	0.4	0.074	24.0	N/C	0% Open	0% Open
L	8/30/2023	49	72.8	27.1	0.0	0.1	0.2	0.060	21.6	N/C	5% Open	0% Open
L	9/21/2023	49	Cannot collect readings									
L	10/24/2023	49	Cannot collect readings									
L	11/28/2023	49	Cannot collect readings									
L	12/27/2023	49	Cannot collect readings									
L	1/30/2023	50	Cannot collect readings									
L	2/21/2023	50	Cannot collect readings									
L	3/17/2023	50	Cannot collect readings									
L	4/27/2023	50	Cannot collect readings									
L	6/1/2023	50	79.7	20.2	0.0	0.1	0.1	0.045	18.7	N/C	100% Open	100% Open
L	7/7/2023	50	Cannot collect readings									
L	7/27/2023	50	76.6	23.3	0.0	0.1	0.2	0.073	23.8	N/C	100% Open	100% Open
L	8/30/2023	50	77.2	22.7	0.0	0.1	0.1	0.056	20.9	N/C	100% Open	100% Open
L	9/21/2023	50	Cannot collect readings									
L	10/24/2023	50	Cannot collect readings									
L	11/28/2023	50	Cannot collect readings									
L	12/27/2023	50	Cannot collect readings									
L	1/30/2023	51	Cannot collect readings									
L	2/21/2023	51	Cannot collect readings									
L	3/17/2023	51	Cannot collect readings									
L	4/27/2023	51	Cannot collect readings									
L	6/1/2023	51	Cannot collect readings									
L	6/22/2023	51	71.1	18.0	0.0	10.9	0.1	0.020	12.5	N/C	100% Open	100% Open
L	7/27/2023	51	82.8	17.2	0.0	0.0	0.4	0.091	26.6	N/C	100% Open	100% Open
L	8/30/2023	51	82.5	17.4	0.0	0.1	0.1	0.011	9.2	N/C	74% Open (8.5 T)	70% Open (8 T)

Appendix C Well Balancing
2023 Extraction Well Data Summary
Clarkstown Landfill, West Nyack, NY

Zone	Date	Well ID	CH4	CO2	O2	Bal	SP	DP	Flow	Temp	Valve Position	Previous Value Postion
L	9/21/2023	51	Cannot collect readings									
L	10/24/2023	51	Cannot collect readings									
L	11/28/2023	51	Cannot collect readings									
L	12/27/2023	51	Cannot collect readings									
L	1/30/2023	52	Cannot collect readings									
L	2/21/2023	52	Cannot collect readings									
L	3/17/2023	52	Cannot collect readings									
L	4/27/2023	52	Cannot collect readings									
L	6/1/2023	52	Cannot collect readings									
L	6/22/2023	52	74.6	25.1	0.1	0.2	0.3	0.011	9.2	N/C	100% Open	100% Open
L	7/27/2023	52	75.9	24.0	0.0	0.1	1.2	0.070	23.3	N/C	100% Open	100% Open
L	8/30/2023	52	76.0	23.9	0.0	0.1	0.8	0.003	4.8	N/C	65% Open (7.5 T)	61% Open (7 T)
L	9/21/2023	52	Cannot collect readings									
L	10/24/2023	52	Cannot collect readings									
L	11/28/2023	52	Cannot collect readings									
L	12/27/2023	52	Cannot collect readings									

D

Flare Log Sheets

Appendix D - Working Flare Log Sheet
2023 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302 Panel Display						
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Flare Temperature	Flow	Total Flow (10^6 CF)	Comments
1/4/2023	9:50	off	6810	6.8	815	184	554.5	Off on arrival (tech in field). Restarted multiple types. Pilot fail initially. Then low flare flow alarm.
1/6/2023	9:02	off	6822	-	-	-	554.6	Pilot Fail; Low Flare Flow. Restart. Flame Fail (x3). Appears to run after 3x restart but w/low flare flow rate alarm
1/9/2023	9:55	off	6835	7.1	815	197	554.8	Low Flare Flow, Low Flow Shutdown. Restart. Flame fail (x3)
1/11/2023	9:12	off	6847	-	-	-	555.0	Pilot fail. Restart (x6 attempts). Flame Fail. Let rest.
1/13/2023	9:11	off	6847	6.7	733	186	555.0	Flame Fail. Restarted on 1 attempt. Low Flare Flow Alarm.
1/16/2023	10:38	off	685*	6.9	845	204	555.0	Low Flow Shutdown/ Low Flow Alarm. Restarted (6x). Flame Fail (4x); Pilot Fail (2x). *Unable to read display for hours due to pop up message that must be cleared at the station.
1/18/2023	8:59	off	6870	6.9	823	201	555.2	Low Flow Rate Shutdown/Low Flare Flow Alarm. Restart. Low Flare Flow + Flame Fail. Restarted 6x before running.
1/20/2023	9:23	off	6881	6.7	811	182	555.3	Flame fail. Restart (X times). Pilot fail 2x; Low flow shutdown.
1/23/2023	9:02	off	6892	-	-	-	555.5	Flame Fail/Low Flare Flow. Restart. Low Flow Shutdown (6x). Let rest.
1/25/2023	8:36	off	6892	-	-	-	555.5	Low Flare Rate Shutdown. Restarted 6x. Pilot fail/flame fail shutdowns. Let rest.
1/27/2023	9:31	off	6893	-	-	-	555.5	System would not start. Combination of Pilot and Flame fail shutdowns. Let rest.
1/30/2023	9:07	on	6893	6.8	593	188	555.5	Pilot gas replaced. Required multiple restarts in field (low flare flow). Field tech performing well balancing. System on when logged.
1/31/2023								Attempted to restart approx. 6 times to continue well balancing; system would not start (low flare flow and/or pilot fails). Let rest.
2/1/2023	8:35	off	6893	-	-	-	555.5	Off when checked. Flame Fail. Restart (6x) times. Combination of pilot fail and flame fails. Let rest.
2/3/2023	10:28	off	6894	-	-	-	555.5	Off when checked. Flame Fail. Restart attempts (6x). Combination of pilot fail and flame fail shutdowns. Let rest.

Appendix D - Working Flare Log Sheet
2023 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302 Panel Display						
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Flare Temperature	Flow	Total Flow (10^6 CF)	Comments
2/6/2023	8:51	off	6894	-	-	-	555.5	Off when checked (Flame Fail). Restart attempts (6x). Combination of pilot fail, low flare flow, flame fail.
2/7/2023	8:40	off	6895	-	-	-	555.5	Off. Flame Fail. Restart attempted 6x - combination pilot fail and flame fail.
2/13/2023	10:36	off	6897	6.7	813	191	555.5	Off. Flame Fail w/Low Flare Flow alarm. Restart 2x w/Low Flare Flow Fails. Ran on 3rd attempt.
2/15/2023	9:11	off	6904	-	-	-	555.6	Off. Flame Fail w/Low Flare Flow alarm. Restarted 6x, flame fails. Let rest.
2/16/2023	-	off	-	-	-	-	-	restarted 6x - flame fail. Tech out to check on system. Nothing found. Temp Sensor on flare reading 0.
2/17/2023	9:26	off	6905	6.8	770	182	555.6	Off. Flame Fail. Restart 3x (low flare flow; pilot fail) but started on 3rd. Flow ±170-190 cfm. Low flare flow alarm was triggered.
2/20/2023	8:27	off	6908	-	-	-	555.6	Off. Flame Fail w/Low Flare Flow alarm. Let rest. Pumping out drip legs today.
2/21/2023	10:44	off	6908	6.8	662	183	555.6	Off. Flame Fail w/Low Flare Flow alarm. Restarted 2nd attempt. Running w/ Low Flare Flow Rate alarm. Shut down - Flame Fail after <45 min; restart 7x (Flame fail). Let rest.
2/22/2023	9:15	off	6909	-	-	-	555.6	Off. Flame Fail. Restart 6x. Flame fail. Let rest.
2/23/2023	9:51	off	6909	-	-	-	555.6	Off. Flame Fail. Remote connection failed but panel is on. Modem reset resolved issue. Restarted station 8 times, flame fail.
2/27/2023				-	-	-	555.6	Off. Flame Fail. Restarted multiple times,
3/1/2023	9:14	off	6910	-	-	-	555.7	Off. Pilot Fail. Restart 6x times. Flame Fail except for first two (pilot fail).
3/3/2023	940	off	6910	-	-	-	555.7	
3/6/2023	815	off	6910	-	-	-	555.7	
3/8/2023	730	off	6910	-	-	-	555.7	
3/10/2023	1000	On	6910	6.9	612	174	555.7	
3/13/2023	9:33	Off	6911	6.7	706	182	555.7	Off. Flame Fail. Restart. 4x. System running.
3/16/2023	9:09	Off	6915	-	-	-	555.7	Off. Flame Fail + Low Flare Flow alarm. Restart. Pilot Fail x 10+. Attempted to troubleshoot. Let Rest.
3/17/2023	9:37	Off	6915	-	-	-	555.7	Off. Flame Fail. Restart 6x. Pilot fail.
3/20/2023	10:48	Off	6915	-	-	-	555.7	Off. Pilot Fail. Restart. Let rest.

Appendix D - Working Flare Log Sheet
2023 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302 Panel Display						
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Flare Temperature	Flow	Total Flow (10^6 CF)	Comments
3/24/2023	10:08	Off	6916	-	-	-	555.7	Off. Pilot fails. Restart 6x; Pilot Fail. Have call in to company to attempt troubleshooting.
3/27/2023	8:25	Off	6916	-	-	-	555.7	Off. Pilot fail. Restart. Run Clock (off) prevented initial restart attempts. Pilot fails. Call into technician for troubleshoot planned for 3/28. Attempted restarts later. Flame Fails. System clock will be reset/corrected.
3/29/2023	1130	On	6916	6.8	675	174	555.7	
4/3/2023	13:04	Off	6917	-	-	-	555.7	Off. Pilot fail. Restart. Pilot fails. Waiting on technician support.
4/5/2023	9:48	Off	6917	-	-	-	555.7	Off. Pilot Fail. Restart. Pilot fails. Let rest.
4/10/2023	10:00	Off	6917	-	-	-	555.7	PF
4/17/2023	9:10	off	6917	-	-	-	555.7	Pilot Fail. Restart. Let rest.
4/19/2023	9:23	Off	6918	-	-	-	555.7	Flame Fail. Restart. Note: temporarily repaired spark plug. Plug ordered. Ran briefly before flame fail.
4/26/2023	9:10	Off	6919	-	-	-	555.7	Flame Fail/ Low Flow Rate Alarm. Restart.
5/1/2023	9:00	Off	6919	-	-	-		
5/3/2023	13:40	Off	6919	-	-	-	555.7	Flame Fail/Low Flare Flow Rate Shutdown. Restarted multiple times.
5/10/2023	15:40	off	6919	-	-	-	555.7	Flame Fail/Low Flare Flow Rate Shutdown. Restarted multiple times. Flow sensor issue suspected.
5/19/2023	-	-	-	-	-	-	-	Attempts to troubleshoot system. Flow sensor had been removed and cleaned. Sensor removed and re-assembled. Obtained and replaced a part lost during process. Flow sensor now appears to work. Flame Fail.
5/22/2023	11:33	off	6920	6.4	496	225	555.7	Flame Fail. Restart. Flame fail; ran after 3rd restart for few minutes before flame fail. Restarted. Values from when flare ran after 4rd attempt.
5/24/2023	8:58	off	6920	6.7	742	221	555.7	Flame Fail. Restart. Run. As of 9:35 still running.
6/1/2023	9:13	on	6923	6.5	765	217	555.8	Flame fail when crew arrived. Started after 1 attempt. Methane reading ±50%; had been lower previously. System ran for approx 2-hours. On restart, multiple flame fails. Methane reading about 30% - likely poor mixture quality.
6/5/2023	1250	on	6924	6.1	926	230	555.8	

Appendix D - Working Flare Log Sheet
2023 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302 Panel Display						
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Flare Temperature	Flow	Total Flow (10^6 CF)	Comments
6/9/2023	12:25	off	6924	6.2	726	232	555.8	Flame Fail. Restart. Run after restart.
6/12/2023	13:09	off	6931	5.9	918	919	555.9	Flame Fail. Restart. Run after restart.
6/14/2023	9:30	off	6937	6.2	844	235	556.0	Flame Fail. Restart. Run after 2 restarts.
6/16/2023	15:36	off	6941	6.3	433	235	556.0	Flame fail. Restart. Flame Fail. Run on 2nd start.
6/19/2023	10:50	off	6942	-	-	-	556.0	Flame fail. Restart. Flame Fail. 3x … Low Flare Temp Alarm/Shutdown
6/23/2023	10:00	off	6942	6.3	777	234	556.0	Temp shutdown. Restarted and run. Well balancing today. Shutdown on flame fail.
6/26/2023	10:13	off	6943	-	-	-	556.0	Flame Fail. Restart. Pilot fail. Tanks empty.
6/28/2023	9:18	off	6944	6.2	698	238	556.1	Propane tanks replaced but leaks identified.
7/5/2023								System off until repair to pilot system.
7/7/2023	10:50	off	6947	6.0	702	236	556.1	Pilot system repaired and inspected for leaks. System ran on first start. Data collected after system was on for some time.
7/10/2023	11:35	off	6948	5.8	780	211	556.1	Flame fail. Restart. System run.
7/12/2023	9:14	off	6955	-	-	-	556.2	Flame Fail. Restart. Flame Fail x 5. Let rest.
7/14/2023	12:50	off	6955	5.7	728	235	556.2	Flame Fail. Restart. Temp continuing to rise.
7/17/2023	13:08	off	6957	6.2	560*	230	556.2	Flame Fail. Restart. Ran for 5 min; FF. Restart. FF x 4; let rest.
7/20/2023	15:24	off	6957	5.4	750	237	556.2	Off. Flame Fail. Restart.
7/21/2023	12:55	On	6968	5.3	837	234	556.3	
7/24/2023	9:51	Off	6976	-	-	-	556.5	Off. Flame Fail. Restart 6x (flame fails). Let rest.
7/26/2023	10:30	off	6976	5.3	720	227	556.5	Off. Flame Fail. Restart. At time of data recording, temperature at 720 and rising.
7/27/2023	12:11	on	6987	5	811	219	556.6	On. Started by onsite crew around 11:00.
7/31/2023	10:55	Off	6993	5.8	680	223	556.7	
8/2/2023	13:10	Off	6994	5.6	671	242	556.7	Flame Fail. Restart. Ran after 2nd restart.
8/4/2023	10:05	Off	6994	6.1	711	227	556.7	
8/7/2023	10:27	Off	6997	5.6	623	225	556.8	Flame Fail. Restart.
8/10/2023	10:06	Off	7007	5.5	730	223	556.9	Flame Fail. Restart. Ran after restart.Temp slowly rising.
8/11/2023	9:15	Off	7017	-	-	-	557.0	Flame Fail. Restarted 5x; flame fails. Let rest.

Appendix D - Working Flare Log Sheet
2023 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302 Panel Display						
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Flare Temperature	Flow	Total Flow (10^6 CF)	Comments
8/14/2023	11:57	off	7017	5.2	673	225	557.0	Flame fail. Restart. Note - flow oscillating between 210 - 235 CFM; normally less variable. Temp slowly continuing to rise as of 12:25
8/18/2023	7:11	Off	7026	5.7	715	200	557.2	Flame Fail. Restarted. Flow oscillating between 190 and 210/220. Amps between 5.7/5.8. Temp as of 07:28 about stable.
8/21/2023	8:20	off	7039	5.6	643	237	557.3	Flame Fail. Restarted. Flame Fail 4x but started on 5th restart but only ran for a few minutes. Restart again and run.
8/23/2023	8:40	off	7041	5.4	744	240	557.4	Flame Fail. Restart. Run after restart. Checked in again 13:15. System values as of check-in time.
8/25/2023	7:27	off	7052	5.8	858	230	557.5	Flame Fail. Restart. Flow oscillating between 220 and 250.
8/29/2023	13:08	off	7065	5.2	787	230	557.7	Flame Fail. Restart. Flow oscillating between 215/240.
8/30/2023	9:48	off	7072	5.1	930	225	557.8	Flame Fail. Restart. FF. Restarted. Temp, flow, amp readings at 13:57.
9/1/2023	1105	off	7083	6.9	-	-	557.9	Flame fail. Restart. Let rest.
9/5/2023	1415	off	7083	5.7	767	221	557.9	Flame fail. Restart.
9/7/2023	930	off	7089	5.4	738	225	558.0	Flame fail. Restart.
9/8/2023	8:04	off	7100	-	-	-	558.2	Flame fail. Restart. Flame fail 5x let rest.
9/11/2023	10:06	off	7100	5.5	735	230	558.2	Flame fail. Restart. Flow fluctuating between 220-240cfm.
9/13/2023	11:33	off	7110	5.7	835	230	558.3	Flame Fail. Restart. Flow fluctuating between 230-245 cfm.
9/15/2023	9:34	off	7119	5.8	748	233	558.5	Flame fail. Restart 4 times. Flow fluctuating.
9/18/2023	9:06	off	7130	5.8	689	230	558.6	Flame Fail. Restart. Run. Flow fluctuating +/- 220-240 range.
9/19/2023	15:39	off	7138	-	-	-	558.7	Flame Fail. Restart 6x w/Flame Fail. Let rest.
9/22/2023	9:50	off	-	-	-	-	-	Flame Fail. Attempt multiple times to perform well balancing. Did not start. Let rest.
9/25/2023	10:06	off	7140	5.4	-	190	558.7	Flame Fail. Restart. Flow lower than recent running between 180-205 range). Amps ranging 5.2 to 5.5. Flame fail after running for several min. Restart attempt 5x - let rest.
9/27/2023	8:00	off	7141	-	-	-	558.7	Flame fail. Multiple attemps to restart. Ran briefly but shut down after about an hour. Unable to restart.

Appendix D - Working Flare Log Sheet
2023 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302 Panel Display						
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Flare Temperature	Flow	Total Flow (10^6 CF)	Comments
9/29/2023	13:52	off	7142	-	-	-	558.8	Flame Fail. Restart attempts 5x, did not run. Let rest.
10/3/2023	13:54	off	7142	5.5	600	220	558.8	Flame Fail. Restart. System run. Flow is variable between 200 and 230 cfm.
10/5/2023	14:20	off	7148	-	-	-	558.8	Flame Fail. Restart. Multiple attempts. Let rest.
10/6/2023	8:13	off	7148	5.6	655	214	558.8	Flame Fail. Restart. 3 attempts. Running w/fluctuating flow 210-230 range.
10/10/2023	12:41	off	7160	5.7	809	220	559.0	Flame Fail. Restart. Run.
10/11/2023	9:26	off	7167	-	-	-	559.1	Flame Fail. Restart. Attempt 5 x let rest.
10/13/2023	9:22	off	7167	-	-	-	559.1	Flame Fail. Restart 6x w/Flame Fail. Let rest.
10/16/2023	11:34	off	7168	5.9	730	220	559.1	Flame Fail. Restart. Flow fluctuating 200-240; avg around 220-230 as of 12:07
10/18/2023	10:44	off	--	-	-	-	--	Unable to remotely connect to panel after multiple attempts (connection time out). Suspect power interruption.
10/19/2023	9:55	off	7172	-	-	-	559.1	Flame Fail. Restart. Attempt 5x; let rest.
10/23/2023	14:53	off	7172	-	-	-	559.1	Flame Fail. Restart. Attempt 4x; let rest.
10/25/2023	9:15	off	7172	-	-	-	559.1	Flame Fail. Restart. Attempt 7x; let rest.
10/25/2023	10:50	off	7172	-	-	-	559.1	Flame Fail. Restart. Attempt 2x; let rest.
10/27/2023	13:55	off	7172	5.8	534	220	559.1	System Time is wrong due to prior power interruption. Fixed clock. Restart. Flow fluctuating between 200 and 240cfm.
11/2/2023	10:06	off	7175	-	-	-	559.2	Flame Fail. Restart 6x w/Flame Fail. Let rest.
11/3/2023	15:33	off	7175	-	-	-	559.2	Flame Fail. Restart 3x w/Flame Fail. Let rest.
11/6/2023	10:47	off	7175	6.1	510	200	559.2	Flame Fail. Restart. Floww fluctuating 185-210 range with spikes up to 225 and dips to 180. Temp 510 and approximately stable 11:08
11/9/2023	14.15	off	7176	6.6	499	190	559.2	Flame Fail. Restarted.
11/10/2023	13:02	off	7178*	-	-	-	559.2	Flame Fail. Restart 6x w/Flame Fail. Let rest.
11/14/2023	9:00	off	7179	-	-	-	559.2	
11/17/2023	10:30	off	7179	6.1	508	197	559.2	
11/20/2023	14:00	off	7187	-	-	-	559.4	Flame Fail. Restart. Let rest.

Appendix D - Working Flare Log Sheet
2023 Working Flare Log Sheet
Clarkstown Landfill, West Nyack, NY

		301/302 Panel Display						
Date	Time	Flare Operation (On/Off)	Hour meter	Amps	Flare Temperature	Flow	Total Flow (10^6 CF)	Comments
11/22/2023	920	off	7188	-	-	-	559.4	Flame Fail. Restart 6x w/Flame Fail. Let rest.
11/27/2023	9:41	off	7188	6.1	407 rising	185	559.4	Flame Fail. Restart. Ran briefly, temp rise, flame fail. Amps 5.8 - 6.1 while running; CFM fluctuating btwn 170 - 200 [+/-185 avg]. Ran briefly again, flame fail. Let rest after 4 additional attemps.
11/29/2023		off		-	-	-		6 start attempts, flame fails.
11/29/2023	10:40	off	7189	-	-	-	559.4	Flame Fail. Restart. 5x flame fail.
11/30/2023	12:00	off	7189	-	-	-		Flame Fail. Attempt 6x. Let rest. Attempt to perform measurements w/system on unsuccessful.
12/1/2023	11:34	off	7189	-	-	-	559.4	Flame Fail. Restart. 5x, Flame Fail. Let rest.
12/4/2023	11:09	off	7189	5.8	540	175	559.4	Flame fail. Restart. Runs with low flare flow alarm due to a dip in CFM. 165-200 cfm. 540°F and slowly rising.
12/8/2023	12:48	off	7194	-	-	-	559.4	Flame fail w/Low Flare Flow Rate Alarm. Restart 6 times; no start. Let rest.
12/11/2023	7:59	off	7194	-	-	-	559.4	Flame fail. Restart 6x. Flame fails. Let rest.
12/13/2023	8:58	off	7195	-	-	-	559.4	Flame fail. Restart 6x. Flame fails. Let rest.
12/15/2023	11:00	off	7195				559.4	Flame Fail. Restart. 6x
12/18/2023	8:40	off	-	-	-	-	-	Unable to connect - possible power or internet interruption due to weather (heavy/flooding rains)

E

Flare Data Sheets

March 25, 2024

Appendix E - Flare Data
2023 Flare Data
Clarkstown Landfill, West Nyack, NY

Date	Time	CH4	CO2	O2	Balance	Comments
1/30/2023	8:52	42.4	17.4	11	29.2	**DL-01:** 180 L. **DL-05:** 56 L. **DL-10:** 327 L. **GE-09:** 48 L.
2/21/2023	N/A	N/C	N/C	N/C	N/C	**DL-01:** dry. **DL-05:** 7 L. **DL-10:** 106 L. **GE-09:** 24 L.
3/17/2023	N/A	N/C	N/C	N/C	N/C	**DL-01:** 60 L. **DL-05:** 25 L. **DL-10:** 45 L. **GE-09:** 48 L.
4/27/2023	N/A	N/C	N/C	N/C	N/C	**DL-01:** dry. **DL-05:** 53 L. **DL-10:** 24 L. **GE-09:** dry.
6/1/2023	9:00	45.1	17.2	6.1	31.7	**DL-01:** 30 L. **DL-05:** 69 L. **DL-10:** 279 L. **GE-09:** 30L
6/28/2023	9:00	41.9	16.1	8	33.8	**DL-01:** 3 L. D**L-05:** 168 L. **DL-10:** 48 L. **GE-09:** 24 L
7/27/2023	11:03	46.5	17.9	3.9	31.7	**DL-01:** 48 L. **DL-05:** 31.5 L. **DL-10:** 18 L. **GE-09:** 54 L.
8/30/2023	10:50	46.05	15.95	6.3	31.7	**DL-01:** 30 L. **DL-05:** 15 L. **DL-10:** 21 L. **GE-09:** 48 L.
9/21/2023	N/A	N/C	N/C	N/C	N/C	**DL-01:** 54 L. **DL-05:** 18 L. **DL-10:** 72 L. **GE-09:** 102 L.
10/24/2023	N/A	N/C	N/C	N/C	N/C	**DL-01:** 14 L. **DL-05:** 66 L. **DL-10:** 53 L. **GE-09:** 324 L.
11/28/2023	N/A	N/C	N/C	N/C	N/C	**DL-01:** 108 L. **DL-05: 27 L**. **DL-10:** 75 L. **GE-09:** 174 L.
12/27/2023	N/A	N/C	N/C	N/C	N/C	**DL-01:** 24 L. **DL-05:** 81 L. **DL-10:** 135 L. **GE-09:** 84 L.

F

FCS-1 Forms

March 25, 2024

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: 1/30/2023 Inspector's Initials: MR

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: 2/21/2023 Inspector's Initials: SW

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: 3/17/2023 Inspector's Initials: MR

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: 4/27/2023 Inspector's Initials: SMW

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: 6/1/2023 Inspector's Initials: SMW/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	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: 6/22/2023 – 7/7/2023 Inspector's Initials: SMW/MTP/MR/CM

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: 7/27/2023 Inspector's Initials: SMW/MR

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: 8/30/2023 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	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: 9/21/2023 Inspector's Initials: SMW

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: 11/01/2023 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	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: 11/28/2023 Inspector's Initials: SMW

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: 12/27/2023 Inspector's Initials: CM

G

AR-1 Forms

March 25, 2024

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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 1/30/2023 Inspector's Initials: MR

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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 2/21/2023 Inspector's Initials: SMW

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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 3/17/2023 Inspector's Initials: MR

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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 4/27/2023 Inspector's Initials: SMW

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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 6/1/2023 Inspector's Initials: MTP / SMW

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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 6/22/2023 – 7/7/2023 Inspector's Initials: MTP / SMW / MR / CM

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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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:7/27/2023 Inspector's Initials: SMW / MR

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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 8/30/2023 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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 9/21/2023 Inspector's Initials: SMW

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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 11/1/2023 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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 11/28/2023 Inspector's Initials: SMW

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*	NS
- *Condition of asphalt/gravel*	NS
- *Evidence of debris and/or obstructions*	X
- *Guard rails*	X
- *Uneven settlement*	X
- *Ponding of water*	X
- *Ruts*	X
Perimeter Access Road: Remainder	
- *Potholes*	NS
- *Evidence of debris and/or obstructions*	NS
- *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: 12/27/2023 Inspector's Initials: CM