

ENVIRONMENTAL SAMPLING CORPORATION

Dedicated to Environmental Monitoring, Science & Technology

June 27, 2019

Mr. Jason Lowery
Wisconsin Department of Natural Resources
101 S. Webster St.
Madison, WI 53703

**Re: Annual Report: July 2018-June 2019
Delafield Sanitary Transfer and Landfill - WDNR License No. 00719
Delafield, Wisconsin**

Dear Mr. Lowery:

With this submission, Environmental Sampling Corporation (ESC) is providing an Annual Report to summarize the monitoring activities conducted during the fiscal year beginning July 2018 to June 2019. This Annual Report is separated into subparts based on the Documentation and Submittals Section of the April 24, 2017 Bidding Documents. The Annual Report sections are as follows: Annual Inspection Reports; Gas Probe Reports; Gas Extraction System Reports; Groundwater and Leachate Monitoring Reports; Private Well Owner Monitoring Reports; and Leachate System and Landfill Cover Evaluation.

Annual Inspection Reports

ESC staff conducted the annual inspection on June 2019. The annual inspection report is provided as **Attachment 1**. Below is a summary of the landfill conditions on June 3, 2019.

- Overall, the landfill site was in good condition. The landfill vegetation appears to be in fair condition; however, grass was approximately 2-3 ft. tall at the time of inspection. The landfill cover and side slopes areas could not be adequately inspected due to the height of the grass since mowing was not completed last year or during 2019 to date.
- Landfill slopes were not inspected due to the height of the grass (approximately 2-3 ft. tall) since mowing was not completed last year or in 2019 to date.
- The Gas Blower and Air Compressor areas are in good condition. The Gas Blower area is fenced in and the building is locked and secured. The main electrical panel located near the compressor building needs to be repaired.
- The Leachate Load out area appeared to be in good condition in June 2019. No areas of ponded water or stained water were observed since the installation of drain tile and establishing positive drainage away from the leachate tank.
- Numerous gas wells have stress vegetation surrounding them. Further investigation is necessary to determine if surface seals need to be re-established or other types of repairs need to be performed.

Gas Probe Reports

The facility currently has 26 gas probes. ESC staff monitored the gas probes monthly during the July 2018-June 2019 reporting period. Gas probe monitoring results were provided to the WDNR via email on a monthly basis throughout the reporting period and are also provided with this Annual Report as **Attachment 2**. A data file containing analytical results and a data certification page has also been provided to the WDNR GEMS data submittal contact.

Methane gas was reported at a level that exceeded the WDNR Explosive Gas Limits (i.e. 5% methane) during the monthly monitoring event in July 2018 at one gas probe (GP-9-8) and during the monthly monitoring event in November 2018 at two gas probes (GP-4-10 and GP-9-8). On both occasions the measured methane concentration decreased to levels less than the explosive gas limit on the same day or when ESC returned to the facility to re-monitor the gas probe later in the week. There were no exceedances of the explosive gas limits during the monthly monitoring conducted during 2019 (i.e. January – June). Methane levels in the gas probes have decreased significantly since the previous fiscal year reporting period (i.e. July 2017-June 2018) due to remediation efforts performed at the facility. A summary of the explosive gas limit exceedances is provided as **Table 1**.

Methane was also detected at levels less than the explosive gas limits during the reporting period at two gas probes (GP-3-25 and GP-9-8). A summary of methane detected in the gas probes during the July 2018 – June 2019 reporting period is provided as **Table 2**. The concentration and frequency of the low-level methane detections are significantly reduced from those reported during the previous fiscal year due to remediation efforts. The methane detected at GP-3-25 is low (i.e. 0.5% or less) and has been decreasing since November 2018. No methane was detected at this gas probe during the last monitoring event in June 2019. The methane detected at GP-9-8 is variable but has been generally decreasing since November 2018 and has not exceeded the LEL since November 2018. Decreases in landfill gas migration are attributed to gas extraction system repairs and remediation. Gas extraction system remediation is further discussed in the following section.

Gas Extraction System Reports

ESC staff conducted monthly monitoring of gas blower, the 31 gas extraction wells, eight header points and gas condensate sumps during the July 2018 - June 2019 reporting period. Although Bid Documents indicate bi-monthly monitoring of the gas blower and gas extraction wells, the methane gas present in the probes during the July 2017 – June 2018 fiscal year made it necessary to increase the gas extraction well monitoring frequency in order to identify issues with the gas extraction system. The gas extraction well monitoring frequency continued on a monthly basis throughout the July 2018 - June 2019 fiscal year.

Gas extraction system monitoring results were provided to the WDNR via email monthly throughout the reporting period and are also provided with this Annual Report as **Attachment 3**. A data file containing analytical results and a data certification page has also been provided to the WDNR GEMS data submittal contact.

An annual gas blower sample was collected on April 29, 2019 and analyzed for VOCs by Method TO-15. Gas quality readings for percent methane, carbon dioxide, oxygen, and balance gases were also measured in the field prior to sample collection. The laboratory analytical data report was provided to the Department via email on May 31, 2019. A summary of the gas blower analytical data is provided as **Attachment 4**. A data file containing the laboratory analytical results and a data certification page has been provided to the WDNR GEMS data submittal contact.

Repairs performed on the gas extraction system during ESC's two-year contract helped to significantly address the landfill gas migration at the facility. Remediation efforts began in August 2017 and were also conducted in December 2017. A summary of the upgrades, repairs, and recordkeeping improvements was provided in the July 2018 – June 2019 Annual Report. The remediation efforts at the facility continued during the current reporting period in accordance with ESC's August 8, 2018 Scope of Work, "Delafield Sanitary Landfill Repairs – Phase 3 – 07/01/2018 – 06/30/2019." The Scope of Work included seven items (Bid Items 17-23) that were performed during the current reporting period. A brief description is provided below.

- Bid Item 17:** **Gas Header Remediation CS-3 & HMP-7 Area 17 - Not completed as of 6/28/19. An extension request will be submitted by ESC to be completed in July 2019.**
Connect the east end of the 6-inch diameter gas header line to the existing 6-inch header line near condensate sump CS-3 to remove liquid and restore vacuum.
- Bid Item 18:** **Install New Auto Dialer, Data Logger, and System Relight Program - Completed**
Upgraded the flare control panel to include a Sensaphone SCADA 3000 auto dialer and datalogger with system relight programming. The datalogger records flare temperature and gas flow at 15 minute intervals and provides notification of a system downtime. The relight program will restart the gas extraction system eight hours after the first alarm. There will be three separate restart attempts before a manual relight is required. Sensaphone schematics and examples of the alarm fax notification, callout destinations, and a sample datalogger report are provided as **Attachment 5**.
- Bid Item 19:** **Install/Program Continuous Igniter (Sparker) and Flare Shroud- Completed**
A larger flare shroud was installed over the existing flare shroud to limit the occurrence of wind related outages. A continuous igniter (sparker) and associated hardware was installed to replace the existing auto-igniter system that was not operational. The continuous igniter maintains a spark in the flare bonnet at 10 second intervals to re-ignite the flare in the event of a flame failure.
- Bid Item 20:** **Recalibrate and Increase Operating Range of Existing Flow Meter - Not completed as of 6/28/19. An extension request will be submitted by ESC to be completed in July 2019.**
The range of the gas flow meter will be increased to allow for an operating range of 0-500 cfm. The flow meter will be factory calibrated and re-installed after the flow meter adjustments are completed.

- Bid Item 21: Remove Orifice Plate and Concrete Manhole Sections- -Completed**
Orifice plates and concrete manhole sections were removed from seven well heads. The orifice plates were malfunctioning or had blockages that prevented landfill gas flow. The manhole sections interfered with access and made work on the well heads difficult.
- Bid Item 22: Permanent Installation of 3" HDPE Lateral (Jumper) from EW2 to EW6 - Completed**
During the previous reporting period, a temporary jumper line was installed from EW-6 to EW-2 to restore vacuum and eliminate subsurface gas migration. Since the temporary line was successful, a permanent jumper line was installed from EW-6 to EW-2 and buried 1-2 ft. below grade.
- Bid Item 23: Leachate and Surface Water Collection and Treatment Evaluation- Completed**
An evaluation of the current leachate extraction system and recommendations was provided to the Department in the "Leachate and Surface Water Report," dated June 24, 2019.

Groundwater and Leachate Monitoring Reports:

The semi-annual groundwater and leachate monitoring events were conducted in October 2018 and April 2019 in accordance with the April 24, 2017 Bidding Documents. Information pertaining to the October 2018 monitoring event was provided to the WDNR under separate cover on December 31, 2018. Information pertaining to the April 2019 semi-annual monitoring event is provided below.

ESC staff was on site on April 29, 2019 to conduct the following semi-annual monitoring:

- Sample two groundwater monitoring wells, and
- Sample one leachate monitoring location

A summary of the monitoring is provided in the following sections titled Groundwater Monitoring and Leachate Monitoring. A data file containing analytical results and a data certification page will also be submitted to the WDNR GEMS data submittal contact.

Groundwater Monitoring

Semi-annual groundwater monitoring at the facility includes depth to water measurements and sample collection at two groundwater monitoring wells (NR-2A and NR-2B). Water levels were recorded, and the groundwater wells were purged and sampled with disposable polyethylene bailers. Monitoring wells had four well volumes purged before sample collection.

The groundwater samples were analyzed for field parameters, inorganic parameters included in the bid documents, and volatile organic compounds (VOCs). Samples were unfiltered, with the exception of dissolved iron and dissolved manganese. Samples collected for these parameters were field filtered using disposable 0.45-micron filters. All samples were placed on ice, chain-of-custody was established, and samples were sent to CT laboratories (WDNR Lab Certification #15-7066030) for analysis via Waltco courier service.

Field parameters (pH, specific conductivity and temperature), were measured using a dual Cole-Parmer pH and conductivity meter which was calibrated and checked in the field during the sampling event. ESC personnel also recorded depth-to-water measurements, sample color, odor, and turbidity.

The groundwater quality results for the samples collected from the two monitoring wells were compared to the WDNR NR140 Preventative Action Limits (PALs) and Enforcement Standards (ES) for Public Health and Public Welfare parameters. Exceedances of NR140 standards for Public Health and Public Welfare are summarized below, followed by a discussion of VOC detections. Historic data summaries for NR-2A and NR-2B are provided as **Attachment 6**.

NR140 Public Health Parameter Exceedances:

Concentrations of arsenic exceeded the NR 140 ES or PAL and concentrations of manganese (total and dissolved) exceeded the NR 140 PAL in the samples collected from groundwater monitoring wells NR-2A and NR-2B. Concentrations of arsenic and manganese in the samples collected from NR-2A and NR-2B were generally similar to recent historic data or were within the range of data available in the GEMS Database. The concentration of total manganese in the sample collected from NR-2A was decreased from recent historic data.

The concentration of lead in the sample collected from NR-2A exceeded the NR 140 PAL. The concentrations of lead was reduced from recent historic data but was within the range of historic data available for NR-2A in the GEMS Database. A summary of NR140 Public Health Parameter exceedances is provided as **Table 3**.

NR140 Public Welfare Parameter Exceedances:

The concentration of chloride in the sample collected from NR-2B exceeded the NR 140 PAL. The reported concentration was similar to available historic data. Concentrations of dissolved iron in the samples collected from NR-2A and NR-2B exceeded the NR 140 ES. The reported concentration were within the range of available historic data for samples. Concentrations of manganese (total and dissolved) in the samples collected from NR-2A and NR-2B also exceeded the NR 140 ES. The WDNR has established both Public Health and Public Welfare parameters for manganese. As indicated above, the concentrations of manganese in the samples collected from NR-2A and NR-2B were generally similar to recent historic data or were within the range of data available in the GEMS Database. The concentration of total manganese in the sample collected from NR-2A was decreased from recent historic data. A summary of NR140 Public Welfare Parameter exceedances is provided as **Table 4**.

VOC Detections:

No VOCs were detected in the sample collected from NR-2A. One VOC, 1,1-dichloroethane, was detected at a concentration less than NR 140 standards in the sample collected from NR-2B. This concentration was reported at a concentration between the laboratory limit of detection (LOD) and limit of quantitation (LOQ). Concentrations between the LOD and LOQ cannot be confirmed by the laboratory and should be considered estimates. No other VOCs were detected in the sample collected from NR-2B.

Leachate Monitoring

A sample was collected from the Leachate Wet Well in April 2019 with a disposable polyethylene bailer. Samples were analyzed for field parameters, inorganic parameters included in the bid documents, and VOCs. Leachate analytical results were compared to recent historic data (2017 and 2018) as well as data from the previous five years that was available in the GEMS Database (i.e. November 2013, July 2014, May 2015, May

2016). Concentrations of alkalinity, hardness, chloride, sulfate, cyanide, TKN, nitrate+nitrite nitrogen, arsenic, antimony, barium, beryllium, cadmium, calcium, chromium, dissolved iron, magnesium, total and dissolved manganese, lead, sodium, zinc, and field pH were similar to available historic data. Concentrations of field conductivity and VOCs were generally similar to or reduced from available historic data. Concentrations of copper, selenium, and thallium were slightly increased from available historic data; however, the reported concentrations were low-level detections between the LOD and LOQ which cannot be confirmed by the laboratory and should be considered estimates. Select parameters (e.g. BOD, COD, TSS, ammonia nitrogen for example) were analyzed periodically over the past five years but were not required by the current Bid Documents. A summary of the leachate analytical data collected during the past two fiscal years is provided as **Attachment 7**.

Private Well Owner Monitoring Reports

The semi-annual private well monitoring events were conducted in October 2018 and April 2019 in accordance with the April 24, 2017 Bidding Documents. Information pertaining to the October 2018 private well monitoring event was provided to the WDNR under separate cover on December 31, 2018. Letters containing laboratory analytical results were sent to the homeowners and WDNR on December 6, 2018. Information pertaining to the April 2019 semi-annual monitoring event is provided below.

Six private well water samples were collected during the semi-annual monitoring event on April 29, 2019. The private well samples were collected after the wells had been purged for 15 minutes. The private well water samples were analyzed for field parameters, inorganic parameters included in the bid documents, and VOCs (Method 524.2).

Laboratory analytical data indicates that no VOCs were detected and there were no exceedances of the primary or secondary drinking water standards for the six private well samples collected. Private well letters were provided to the homeowners and the WDNR on May 28, 2019.

Leachate System and Landfill Cover Evaluation

As indicated in the Bidding Documents, the existing landfill cover a limited clay content and is not in compliance with NR 504.07, Wis. Adm. Code. The permeable cover results in additional surface water infiltration and decreases the efficiency of the gas collection system. As part of the first annual report, ESC was to assess the landfill cover and leachate extraction system. This assessment was provided in the July 2017-June 2018 Annual Report dated June 2018.

During the current reporting period, ESC was asked to review the facility files and perform a leachate treatment alternative analysis. The "Leachate and Surface Water Report" was provided to the Department on June 24, 2019. In this report, ESC provides 14 recommendations pertaining to the operation, maintenance, and monitoring of the leachate extraction system.

This letter satisfies the annual reporting requirements for the July 2018 – June 2019 fiscal year. If you have any questions or comments regarding this submittal, please contact the undersigned at 414-427-5033.

Sincerely,
Environmental Sampling Corporation



Frank Perugini
Director of Operation



Tracy Ipavec
Sr. Environmental Specialist

Attachments

cc: Gerald DeMers: WDNR – Milwaukee (electronic copy)
Angela Carey: WDNR – Madison (electronic copy)
GEMS Data Submittal Contact: WDNR-Madison w/CD
Todd Watermolen: ESC (electronic copy)
Frank Perugini: ESC (electronic copy)

Tables

Table 1: Exceedance Summary – Explosive Gas Limits

Table 2: Summary of Monitoring Locations with Methane Gas Detections

Table 3: NR140 Public Health Parameter Exceedances

Table 4: NR140 Public Welfare Parameter Exceedances

Table 1

**Exceedance Summary
Explosive Gas Limits**

**Delafield Sanitary Transfer and Landfill
License #00719
July 2018 - June 2019**

WELL ID#	WDNR ID#	ANALYTE	WDNR CODE	SAMPLE DATE	RESULT	UNITS	EXCEEDS
July 2018							
GP-9-8	374	Methane (%)	88547	7/10/18	7.1	%	LEL (5% methane)
August 2018							
No exceedances of the LEL for methane							
September 2018							
No exceedances of the LEL for methane							
October 2018							
No exceedances of the LEL for methane							
November 2018							
GP-4-10	360	Methane (%)	88547	11/5/18	10.4 / 9.9	%	LEL (5% methane)
GP-9-8	374	Methane (%)	88547	11/5/18	10.2	%	LEL (5% methane)
December 2018							
No exceedances of the LEL for methane							
January 2019							
No exceedances of the LEL for methane							
February 2019							
No exceedances of the LEL for methane							
March 2019							
No exceedances of the LEL for methane							
April 2019							
No exceedances of the LEL for methane							
May 2019							
No exceedances of the LEL for methane							
June 2019							
No exceedances of the LEL for methane							

Notes:

LEL - Lower explosive limit

The exceedance summary above indicates all methane detections in gas probes that were reported at a concentration in excess of the LEL for methane (i.e. 5%) in accordance with NR 507.22(1)(c) as indicated below. There are no facility structures for which the limit of 25% of LEL would apply.

"The owner or operator shall immediately notify the department and take all necessary steps to protect public health and welfare if a stabilized reading exceeds the lower explosive limit of any explosive gas generated by the waste fill in the soils outside of the limits of filling or air within 200 feet of the landfill property boundary or beyond the landfill property boundary, or 25% of the lower explosive limit in any facility structure, excluding gas control or recovery system components."

Table 2**Summary of Monitoring Locations with Methane Gas Detections****Delafield Sanitary Transfer and Landfill****License #00719****July 2018 - June 2019**

WELL ID# (DID)			
	GP-3-25 (359)	GP-4-10 (360)	GP-9-8 (374)
07/10/18	0.0	0.0	7.1 / 4.5
08/03/18	0.0	0.0	3.4
09/06/18	0.0	0.0	4.3
10/12/18	0.0	0.0	4.1
11/05/18	0.4	10.4 / 9.9	10.2 / 4.4
11/08/18	--	0.0	--
12/03/18	0.5	0.0	4.3
01/08/19	0.1	0.0	3.5
02/05/19	0.1	0.0	4.4
03/08/19	0.1	0.0	0.8
04/12/19	0.2	0.0	2.1
05/15/19	0.1	0.0	1.6
06/03/19	0.0	0.0	2.3

Notes:

During any monitoring event in which a methane concentration exceeded the %LEL, a second reading was recorded after four hours or more. If the second reading still exceeded the %LEL for methane, ESC personnel returned to the facility to remonitor the gas probe.

Table 3

**Exceedance Summary
NR 140 Preventive Action Limit and Enforcement Standard
Public Health Parameters**

**Delafield Sanitary Transfer and Landfill
License #00719
April 2019**

WELL ID#	WDNR ID#	ANALYTE	WDNR CODE	SAMPLE DATE	RESULT	UNITS	EXCEEDS
NR-2A	380	Arsenic, total	01002	4/29/19	3.0	ug/L	PAL (1.0)
NR-2A	380	Manganese, total	01055	4/29/19	573	ug/L	PAL (60)
NR-2A	380	Manganese, dissolved	01056	4/29/19	282	ug/L	PAL (60)
NR-2A	380	Lead, total	01051	4/29/19	9.8	ug/L	PAL (1.5)
NR-2B	381	Arsenic, total	01002	4/29/19	10.5	ug/L	ES (10)
NR-2B	381	Manganese, total	01055	4/29/19	161	ug/L	PAL (60)
NR-2B	381	Manganese, dissolved	01056	4/29/19	161	ug/L	PAL (60)

Notes:

PAL -NR 140 Preventive Action Limits for Public Health parameters

ES - NR 140 Enforcement Standards for Public Health parameters

Table 4

**Exceedance Summary
NR 140 Preventive Action Limit and Enforcement Standard
Public Welfare Parameters**

**Delafield Sanitary Transfer and Landfill
License #00719
April 2019**

WELL ID#	WDNR ID#	ANALYTE	WDNR CODE	SAMPLE DATE	RESULT	UNITS	EXCEEDS
NR-2A	380	Iron, dissolved	01046	4/29/19	815	ug/L	ES (300)
NR-2A	380	Manganese, total	01055	4/29/19	573	ug/L	ES (50)
NR-2A	380	Manganese, dissolved	01056	4/29/19	282	ug/L	ES (50)
NR-2B	381	Chloride	00940	4/29/19	140	mg/L	PAL (125)
NR-2B	381	Iron, dissolved	01046	4/29/19	1,980	ug/L	ES (300)
NR-2B	381	Manganese, total	01055	4/29/19	161	ug/L	ES (50)
NR-2B	381	Manganese, dissolved	01056	4/29/19	161	ug/L	ES (50)

Notes:

PAL -NR 140 Preventive Action Limits for Public Welfare parameters

ES - NR 140 Enforcement Standards for Public Welfare parameters

Attachment 1

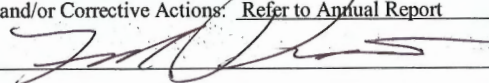
Annual Inspection Report

Specific Inspection Items	Frequency	Tasks / Potential Problem Areas	Status *	Notes
Flare operation	Monthly	Flare not lit	OK (1)	Upgrades to flare tip and control panel were completed
Leachate extraction system general operation	Monthly	Tank empty and sump pump not running when high float is tilted	OK (2)	WDNR manages leachate extraction
Gas probe readings	Monthly	Probe results indicate off-site gas migration	OK (1)	Refer to Annual Report
Gas probe pressure differentials	Bi-monthly	System not properly balanced	OK (1)	
Flare drive belt and blower	Bi-monthly	Replace belt if belt wear is excessive Lubricate blower	OK (1)	
Air compressor for pneumatic pumps	Bi-monthly	Verify that air compressor is operating	OK (1)	
Air compressor belts	Quarterly	Replace belt if belt wear is excessive	OK (1)	
Air compressor filters and oil	Quarterly	Replace air filter and oil	OK (1)	
Leachate tank floats	Semi-annual	Clean floats	OK (1)	
Groundwater and leachate monitoring	Semi-annual	See Table 2 for sample locations; Table 3 for analytes	OK (1)	Refer to Annual Report
Condition of two monitoring wells and wellhead covers	Semi-annual	Signs of tampering, casing damaged, lock missing.	OK (1)	
Gas probe sampling at blower	Annually	Sample for benzene, vinyl chloride % methane, % CO2, % O2	OK (1)	Refer to Annual Report
Inspect and clean pneumatic condensate pumps	Annually	Check pumps for operation Clean pumps	OK (1)	
Final cover vegetation	Annually	Bare spots, stressed vegetation, deep rooted vegetation.	OK (2)	Refer to Annual Inspection Photos
Final cover slope	Annually	Gullies, erosion, lack of vegetation, subsidence, ponding.	OK (2)	Mowing was not performed. Cap inspection could not be performed.
Evidence of burrowing animals	Annually	Damage to final cover, evidence of waste.	OK (2)	Mowing was not performed. Cap inspection could not be performed.
Gas extraction wells and header	Annually	Torn flexible hosing, signs of tampering, damaged or blocked vent risers, stressed vegetation	OK (2)	Refer to Annual Inspection Photos

* (1) Acceptable - No Maintenance Required. (2) Not Acceptable - Identify Required Maintenance.

Summary of Deficiencies and/or Corrective Actions: Refer to Annual Report

Signature of Inspector



Date June 3, 2019



Photo #1: Gas Well G-1 Lid



Photo #2: Gas Well G-1 – Stressed Vegetation Surrounding Gas Well



Photo #3: Gas Well EW-20 - Stressed Vegetation Surrounding Gas Well



Photo #4: Gas Well EW-16 Lid



Photo #5: Gas Well EW-16 - Stressed Vegetation Surrounding Gas Well



Photo #6: Gas Well G-3 Lid



Photo #7: Gas Well G-3 - Stressed Vegetation Surrounding Gas Well



Photo #8: Gas Well G-4 - Stressed Vegetation Surrounding Gas Well.



Photo #9: HMP-2 – Protective Casing Has Settled. HMP-2 Is Located In A Low Area.



Photo #10: Gas Well G-8 Lid



Photo #11: Gas Well G-8 - Stressed Vegetation Surrounding Gas Well.



Photo #12: Picture Of Low Wet Area North Side Slope Downslope From G-1.



Photo #13: Picture Of Low Wet Area North Side Slope Downslope From EW-19.



Photo #14: Picture Of Low Wet Area West Side Slope Near CS-02.



Photo #15: Picture Of Low Wet Area West Side Slope Downslope From EW-4.



Photo #16: Picture Of Low Wet Area West Side Slope Near HMP-3.

**Delafield Landfill
June 2019**



Photo #17: Picture Of The Re-seeded Area On The North Side Slope.



Photo #18: Picture Of The Re-seeded Area On The North Side Slope.



Photo #19: Main Electrical Panel Needs To Be Replaced

Attachment 2

Gas Probe Monitoring Reports

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 7/10/2018 9:10 AM
 Temp (°F): 75°F Current Conditions/Rel. Humidity: Sunny / 50%
 Barometric Pressure (in. Hg): 29.11 Trend: FC (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 7/10/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:15 Field Check – End Time: 11:00

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	7/10/2018 9:39	0.0	17.9	3.3	78.8	-0.01	
MP-01 orange	356	15	7/10/2018 9:42	0.0	2.0	18.7	79.3	-0.03	
MP-02 yellow	357	10	7/10/2018 9:36	0.0	0.4	19.8	79.8	-0.05	Probe open to atmosphere (vented)
MP-03 yellow	358	10	7/10/2018 9:24	0.0	0.1	19.9	80	+0.01	Positive Pressure
MP-03 red	359	25	7/10/2018 9:32	0.0	0.0	20.1	79.9	-0.01	5 Cycles, Methane concentration peaked at 2.0%, Probe open to atmosphere (vented)
MP-04 yellow	360	10	7/10/2018 9:16	0.0	5.9	13.9	80.2	-0.02	
MP-04 red	361	27	7/10/2018 9:18	0.0	0.0	20.1	79.9	-0.02	
MP-05 yellow	362	10	7/10/2018 10:57	0.0	0.0	19.7	80.3	0.00	
MP-06 yellow	363	10	7/10/2018 10:44	0.0	1.7	18.6	79.7	0.00	
MP-06 orange	364	19	7/10/2018 10:48	0.0	1.0	18.1	80.9	0.00	
MP-06 red	365	30	7/10/2018 10:52	0.0	0.9	18.3	80.8	-0.02	
MP-06B yellow	366	11	7/10/2018 10:34	0.0	1.9	16.4	81.7	0.00	
MP-06B orange	367	22	7/10/2018 10:38	0.0	2.5	16.0	81.5	+0.02	Positive Pressure
MP-06B red	368	34	7/10/2018 10:41	0.0	3.5	15.9	80.6	+0.01	Positive Pressure
MP-07 yellow	369	9	7/10/2018 10:29	0.0	5.2	14.5	80.3	-0.01	
MP-07 red	370	18	7/10/2018 10:32	0.0	6.1	12.8	81.1	0.00	
MP-8 yellow	371	10	7/10/2018 10:17	0.0	0.7	19.5	79.8	0.00	
MP-08 orange	372	30	7/10/2018 10:20	0.0	1.5	18.5	80.0	-0.02	
MP-08 red	373	50	7/10/2018 10:26	0.0	2.3	17.5	80.2	+0.03	Positive Pressure
MP-09 yellow	374	8	7/10/2018 10:05	7.1	5.6	1.8	85.5	-0.01	5 Cycles, Methane concentration >5.0%, above the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented)
			7/10/2018 14:29	4.5	6.0	1.1	88.4	+0.02	
MP-09 orange	375	22	7/10/2018 10:10	0.0	1.9	18.6	79.5	-0.06	
MP-10 yellow	376	10	7/10/2018 9:47	0.0	4.3	15.2	80.5	+0.03	Positive Pressure
MP-10 orange	377	23	7/10/2018 9:51	0.0	5.2	12.9	81.9	+0.01	Positive Pressure
MP-10 red	378	38	7/10/2018 9:54	0.0	12.8	5.6	81.6	+0.04	Positive Pressure
Boat Comp.	379	NA	7/10/2018 9:21	0.0	0.0	20.2	79.8	-0.01	

COMMENTS:

Gas probes with positive pressure
 Gas Probes with CH₄%

Gas Collection System was running upon my arrival on 7/10/18

Second gas reading taken at MP-9Y after the probe was opened to the atmosphere and additional vacuum was applied to adjacent gas extraction wells.

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 8/3/2018 9:00 AM
 Temp (°F): 66°F Current Conditions/Rel. Humidity: Mostly Sunny / 94%
 Barometric Pressure (in. Hg): 29.00 Trend: FC (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 8/3/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:00 Field Check – End Time: 11:15

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	8/3/2018 9:58	0.0	12.4	11.6	76.0	-0.04	
MP-01 orange	356	15	8/3/2018 10:00	0.0	0.3	19.9	79.8	-0.40	
MP-02 yellow	357	10	8/3/2018 9:54	0.0	1.0	19.4	79.6	0.00	Probe open to atmosphere (vented)
MP-03 yellow	358	10	8/3/2018 9:45	0.0	0.1	20.1	79.8	+0.01	Positive Pressure
MP-03 red	359	25	8/3/2018 9:51	0.0	0.0	20.2	79.8	+0.01	4 Cycles, Methane concentration peaked at 1.9%, Probe open to atmosphere (vented)
MP-04 yellow	360	10	8/3/2018 9:36	0.0	6.0	13.5	80.5	0.00	
MP-04 red	361	27	8/3/2018 9:39	0.0	0.0	20.1	79.9	+0.01	Positive Pressure
MP-05 yellow	362	10	8/3/2018 11:10	0.0	0.0	20.2	79.8	0.00	
MP-06 yellow	363	10	8/3/2018 10:56	0.0	2.1	18.6	79.3	0.00	
MP-06 orange	364	19	8/3/2018 10:59	0.0	1.4	17.8	80.8	0.00	
MP-06 red	365	30	8/3/2018 11:03	0.0	1.5	17.7	80.8	-0.01	
MP-06B yellow	366	11	8/3/2018 10:46	0.0	2.4	16.6	81.0	0.00	
MP-06B orange	367	22	8/3/2018 10:49	0.0	3.0	15.9	81.1	0.00	
MP-06B red	368	34	8/3/2018 10:53	0.0	3.5	15.8	80.7	0.00	
MP-07 yellow	369	9	8/3/2018 10:40	0.0	5.7	15.2	79.1	+0.01	Positive Pressure
MP-07 red	370	18	8/3/2018 10:43	0.0	6.7	12.6	80.7	0.00	
MP-8 yellow	371	10	8/3/2018 10:30	0.0	0.5	19.6	79.9	+0.02	Positive Pressure
MP-08 orange	372	30	8/3/2018 10:33	0.0	1.8	18.5	79.7	0.00	
MP-08 red	373	50	8/3/2018 10:37	0.0	2.4	17.2	80.4	0.00	
MP-09 yellow	374	8	8/3/2018 10:17	3.4	7.3	0.5	88.8	+0.02	3 Cycles, Methane concentration <5.0%, below the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented)
MP-09 orange	375	22	8/3/2018 10:26	0.0	3.2	17.4	79.4	-0.03	
MP-10 yellow	376	10	8/3/2018 10:04	0.0	4.8	15.0	80.2	-0.01	
MP-10 orange	377	23	8/3/2018 10:06	0.0	5.7	12.6	81.7	0.00	
MP-10 red	378	38	8/3/2018 10:09	0.0	12.3	6.5	81.2	-0.01	
Boat Comp.	379	NA	8/3/2018 9:42	0.0	0.0	20.2	79.8	-0.01	

COMMENTS:

Gas probes with positive pressure
 Gas Probes with CH₄%
 Gas Collection System was running upon my arrival on 08/03/18
 Leachate loadout area flooded with runoff across the road into the field
 Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 9/6/2018 9:15 AM
 Temp (°F): 60°F Current Conditions/Rel. Humidity: Partly Sunny / 94%
 Barometric Pressure (in. Hg): 29.34 Trend: F S G (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 9/6/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:15 Field Check – End Time: 11:00

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	9/6/2018 9:45	0.0	8.0	11.2	80.8	-0.11	
MP-01 orange	356	15	9/6/2018 9:49	0.0	0.4	20.6	79.0	-0.16	
MP-02 yellow	357	10	9/6/2018 9:38	0.0	2.9	18.1	79.0	-0.04	Probe open to atmosphere (vented)
MP-03 yellow	358	10	9/6/2018 9:28	0.0	0.0	20.6	79.4	+0.03	Positive Pressure
MP-03 red	359	25	9/6/2018 9:32	0.0	0.1	20.8	79.1	0.00	4 Cycles, Methane concentration peaked at 0.3%, Probe open to atmosphere (vented)
MP-04 yellow	360	10	9/6/2018 9:18	0.0	6.4	12.3	81.3	0.00	
MP-04 red	361	27	9/6/2018 9:21	0.0	2.3	18.4	79.3	-0.03	
MP-05 yellow	362	10	9/6/2018 10:56	0.0	0.0	20.9	79.1	+0.01	Positive Pressure
MP-06 yellow	363	10	9/6/2018 10:43	0.0	1.6	19.3	79.1	0.00	
MP-06 orange	364	19	9/6/2018 10:45	0.0	0.9	20.3	78.8	-0.01	
MP-06 red	365	30	9/6/2018 10:49	0.0	1.3	19.0	79.7	-0.03	
MP-06B yellow	366	11	9/6/2018 10:34	0.0	1.9	17.1	81.0	-0.01	
MP-06B orange	367	22	9/6/2018 10:37	0.0	2.8	16.8	80.4	-0.02	
MP-06B red	368	34	9/6/2018 10:40	0.0	4.3	15.1	80.6	+0.02	Positive Pressure
MP-07 yellow	369	9	9/6/2018 10:29	0.0	7.1	11.5	81.4	0.00	
MP-07 red	370	18	9/6/2018 10:32	0.0	7.5	11.4	81.1	-0.01	
MP-8 yellow	371	10	9/6/2018 10:18	0.0	0.8	20.0	79.2	0.00	Positive Pressure
MP-08 orange	372	30	9/6/2018 10:21	0.0	1.8	19.1	79.1	0.00	
MP-08 red	373	50	9/6/2018 10:25	0.0	2.6	18.1	79.3	0.00	
MP-09 yellow	374	8	9/6/2018 10:08	4.3	8.8	0.3	86.6	+0.04	Pump failed during the 2 Cycle, Methane concentration <5.0%, below the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented), ponded water near probe
MP-09 orange	375	22	9/6/2018 10:11	0.0	2.5	18.4	79.1	-0.03	
MP-10 yellow	376	10	9/6/2018 9:53	0.0	4.8	14.9	80.3	-0.01	
MP-10 orange	377	23	9/6/2018 9:56	0.0	5.5	14.1	80.4	-0.02	
MP-10 red	378	38	9/6/2018 9:59	0.0	9.8	10.7	79.5	-0.02	
Boat Comp.	379	NA	9/6/2018 9:24	0.0	0.9	19.7	79.4	-0.03	

COMMENTS:

Gas probes with positive pressure
 Gas Probes with CH4%
 Gas Collection System was running upon my arrival on 09/06/18
 Leachate loadout area flooded
 Grass height around 3-4' , mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 10/12/2018 9:20 AM
 Temp (°F): 36°F Current Conditions/Rel. Humidity: Cloudy / 70%
 Barometric Pressure (in. Hg): 29.00 Trend: FCB (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 10/12/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:20 Field Check – End Time: 10:45

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	10/12/2018 9:42	0.0	11.2	8.0	80.8	-0.06	
MP-01 orange	356	15	10/12/2018 9:45	0.0	0.1	21.9	78.0	-0.05	
MP-02 yellow	357	10	10/12/2018 9:39	0.0	0.2	21.8	78.0	-0.01	Probe open to atmosphere (vented)
MP-03 yellow	358	10	10/12/2018 9:30	0.0	0.1	21.8	78.1	0.00	
MP-03 red	359	25	10/12/2018 9:36	0.0	0.1	21.9	78.0	-0.01	4 Cycles, Methane concentration peaked at 2.2%. Probe open to atmosphere (vented)
MP-04 yellow	360	10	10/12/2018 9:23	0.0	5.1	14.5	80.4	-0.01	
MP-04 red	361	27	10/12/2018 9:25	0.0	0.1	21.7	78.2	-0.02	
MP-05 yellow	362	10	10/12/2018 10:44	0.0	0.1	21.8	78.1	0.00	
MP-06 yellow	363	10	10/12/2018 10:32	0.0	0.8	21.2	78.0	0.00	
MP-06 orange	364	19	10/12/2018 10:35	0.0	1.9	19.4	78.7	-0.02	
MP-06 red	365	30	10/12/2018 10:39	0.0	1.1	20.6	78.3	-0.01	
MP-06B yellow	366	11	10/12/2018 10:23	0.0	2.9	17.9	79.2	+0.01	Positive Pressure
MP-06B orange	367	22	10/12/2018 10:26	0.0	3.4	17.1	79.5	0.00	
MP-06B red	368	34	10/12/2018 10:29	0.0	4.5	15.8	79.7	+0.01	Positive Pressure
MP-07 yellow	369	9	10/12/2018 10:18	0.0	8.1	11.8	80.1	0.00	
MP-07 red	370	18	10/12/2018 10:20	0.0	8.1	12.5	79.4	0.00	
MP-8 yellow	371	10	10/12/2018 10:08	0.0	1.3	20.2	78.5	-0.01	Positive Pressure
MP-08 orange	372	30	10/12/2018 10:12	0.0	2.3	19.5	78.2	-0.02	
MP-08 red	373	50	10/12/2018 10:15	0.0	3.6	17.5	78.9	0.00	
MP-09 yellow	374	8	10/12/2018 10:01	4.1	8.2	0.8	87.2	+0.02	Pump failed during the 2 Cycle, Methane concentration <5.0%, below the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented)
MP-09 orange	375	22	10/12/2018 10:03	0.0	0.2	21.8	78	-0.02	
MP-10 yellow	376	10	10/12/2018 9:48	0.0	5.7	15.9	78.4	0.00	
MP-10 orange	377	23	10/12/2018 9:51	0.0	6.3	15.8	77.9	0.00	
MP-10 red	378	38	10/12/2018 9:54	0.0	7.0	15.7	77.3	+0.02	Positive Pressure
Boat Comp.	379	NA	10/12/2018 9:28	0.0	0.1	21.7	78.2	-0.03	

COMMENTS:

Gas probes with positive pressure
 Gas Probes with CH4%
 Gas Collection System was running upon my arrival on 10/12/18
 Grass height around 3-4' . mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 11/5/2018 9:30 AM
 Temp (°F): 45°F Current Conditions/Rel. Humidity: Cloudy / 71%
 Barometric Pressure (in. Hg): 28.80 Trend: (L) R (circle one)
 Condition of Ground Surface/Recent Precipitation: Damp - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 11/5/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:30 Field Check – End Time: 11:10

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	11/5/2018 11:09	0.0	10.7	10.5	78.8	-0.09	
MP-01 orange	356	15	11/5/2018 11:11	0.0	13.9	9.9	76.2	-0.05	
MP-02 yellow	357	10	11/5/2018 11:05	0.0	0.2	22	77.8	0.00	Probe open to atmosphere (vented)
MP-03 yellow	358	10	11/5/2018 10:55	0.0	0.1	21.9	78	-0.02	
MP-03 red	359	25	11/5/2018 11:02	0.4	0.1	22	77.5	0.00	4 Cycles, Methane concentration peaked at 2.6%, Probe open to atmosphere (vented)
MP-04 yellow	360	10	11/5/2018 10:34	10.4	5.3	11.3	73	-0.02	5 Cycles, Probe opened to atmosphere on 11/5/18 (vented)
			11/5/2018 16:13	9.9	7.6	10.4	72.1	-0.07	5 Cycles, Second reading taken in afternoon after probe vented
			11/8/2018 9:36	0.0	0.2	20.6	79.2	0.00	4 Cycles, Recheck after probe open to atmosphere (vented)
MP-04 red	361	27	11/5/2018 10:38	0.0	0.1	21.7	78.2	+0.01	Positive Pressure
MP-05 yellow	362	10	11/5/2018 12:09	0.0	0.1	21.6	78.3	-0.01	
MP-06 yellow	363	10	11/5/2018 11:59	0.0	0.4	21.3	78.3	-0.01	
MP-06 orange	364	19	11/5/2018 12:01	0.0	1.9	20.1	78	0.00	
MP-06 red	365	30	11/5/2018 12:05	0.0	0.9	20.8	78.3	-0.01	
MP-06B yellow	366	11	11/5/2018 11:50	0.0	2.5	19	78.5	-0.01	
MP-06B orange	367	22	11/5/2018 11:53	0.0	3.8	16.9	79.3	0.00	
MP-06B red	368	34	11/5/2018 11:56	0.0	4.4	16.3	79.3	-0.02	
MP-07 yellow	369	9	11/5/2018 11:45	0.0	7	15.4	77.6	0.00	
MP-07 red	370	18	11/5/2018 11:48	0.0	6.9	15.5	77.6	-0.01	
MP-8 yellow	371	10	11/5/2018 11:36	0.0	1.2	20.9	77.9	0.00	
MP-08 orange	372	30	11/5/2018 11:38	0.0	2.2	19.6	78.2	-0.01	
MP-08 red	373	50	11/5/2018 11:41	0.0	4	16.9	79.1	0.00	
MP-09 yellow	374	8	11/5/2018 11:29	10.2	6.8	0.7	82.3	+0.02	Methane concentration >5.0%, above the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented)
			11/5/2018 15:40	4.4	4.6	7.8	83.2	+0.04	Second reading taken in the afternoon after additional purging, Methane concentration <5.0%, below the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented)
MP-09 orange	375	22	11/5/2018 11:31	0.0	0.2	21.6	78.2	-0.03	
MP-10 yellow	376	10	11/5/2018 11:14	0.0	4.3	18.2	77.5	-0.01	
MP-10 orange	377	23	11/5/2018 11:18	0.0	4.5	18.1	77.4	0.00	
MP-10 red	378	38	11/5/2018 11:22	0.0	8.5	13.4	78.1	0.00	
Boat Comp.	379	NA	11/5/2018 10:44	0.0	1.9	19.6	78.5	+0.03	Positive Pressure

COMMENTS:

Gas probes with positive pressure
 Gas Probes with CH₄%
 Gas Collection System was running upon my arrival on 11/05/18
 Area around the leachate tank flooded with liquid running across road.
 Grass height around 3-4", mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 12/3/2018 10:30 AM
 Temp (°F): 27^oF Current Conditions/Rel. Humidity: Cloudy / 80%
 Barometric Pressure (in. Hg): 29.10 Trend: F S G (circle one)
 Condition of Ground Surface/Recent Precipitation: Snow covered - Flurries
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 12/3/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 10:30 Field Check – End Time: 12:10

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	12/3/2018 11:04	0.0	11.7	4.1	84.2	-0.45	
MP-01 orange	356	15	12/3/2018 11:07	0.0	12.4	12.8	74.8	-0.20	
MP-02 yellow	357	10	12/3/2018 11:01	0.0	0.0	24.3	75.7	-0.03	Probe open to atmosphere (vented)
MP-03 yellow	358	10	12/3/2018 10:50	0.0	0.0	23.1	76.9	-0.01	
MP-03 red	359	25	12/3/2018 10:57	0.5	0.2	23.4	75.9	+0.01	4 Cycles, Methane concentration peaked at 7.1%, Probe open to atmosphere (vented), Positive Pressure
MP-04 yellow	360	10	12/3/2018 10:41	0.0	0.0	22.4	77.6	-0.01	Probe opened to atmosphere on 11/5/18 (vented)
MP-04 red	361	27	12/3/2018 10:43	0.0	0.0	22.6	77.4	-0.03	
MP-05 yellow	362	10	12/3/2018 12:08	0.0	0.1	23.6	76.3	0.00	
MP-06 yellow	363	10	12/3/2018 11:54	0.0	0.2	23.6	76.2	0.00	
MP-06 orange	364	19	12/3/2018 11:57	0.0	1.0	23.1	75.9	-0.04	
MP-06 red	365	30	12/3/2018 12:02	0.0	0.1	23.7	76.2	0.00	
MP-06B yellow	366	11	12/3/2018 11:46	0.0	1.9	22.3	75.8	0.00	
MP-06B orange	367	22	12/3/2018 11:48	0.0	3.1	20.6	76.3	-0.02	
MP-06B red	368	34	12/3/2018 11:51	0.0	4.0	18.8	77.2	+0.01	Positive pressure
MP-07 yellow	369	9	12/3/2018 11:40	0.0	4.2	20.0	75.8	0.00	
MP-07 red	370	18	12/3/2018 11:43	0.0	4.9	19.7	75.4	0.00	
MP-8 yellow	371	10	12/3/2018 11:31	0.0	0.9	23.5	75.6	-0.03	
MP-08 orange	372	30	12/3/2018 11:33	0.0	1.5	22.7	75.8	0.00	
MP-08 red	373	50	12/3/2018 11:37	0.0	3.8	18.9	77.3	-0.01	
MP-09 yellow	374	8	12/3/2018 11:20	4.3	2.8	13.8	79.1	+0.02	Methane concentration <5.0%, below the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented), Pump failed during 1st cycle
MP-09 orange	375	22	12/3/2018 11:23	0.0	3.8	20.3	75.9	-0.05	
MP-10 yellow	376	10	12/3/2018 11:10	0.0	2.4	22.0	75.6	-0.02	
MP-10 orange	377	23	12/3/2018 11:13	0.0	2.4	21.9	75.7	-0.04	
MP-10 red	378	38	12/3/2018 11:16	0.0	3.9	20.6	75.5	-0.01	
Boat Comp.	379	NA	12/3/2018 10:46	0.0	0.0	22.9	77.1	0.00	

COMMENTS:

Gas probes with positive pressure

Gas Probes with CH4%

Gas Collection System was running upon my arrival on 12/03/18

Grass height around 3-4' , mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 1/8/2019 10:00 AM

Temp (°F): 36°F Current Conditions/Rel. Humidity: Partly Cloudy / 90%

Barometric Pressure (in. Hg): 28.60 Trend: F S G (circle one)

Condition of Ground Surface/Recent Precipitation: Damp - rain earlier in the morning

Monitored By: Scott Freimark (ESC)

Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764

Date Meter Last Calibrated: 1/8/2019

Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%

Field Check – Start Time: 10:00 Field Check – End Time: 11:45

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	1/8/2019 10:37	0	12.3	9	78.7	-0.14	
MP-01 orange	356	15	1/8/2019 10:42	0	13.7	13.2	73.1	-0.10	
MP-02 yellow	357	10	1/8/2019 10:34	0	0.2	22.3	77.5	-0.02	Probe open to atmosphere (vented)
MP-03 yellow	358	10	1/8/2019 10:22	0	0.1	22.1	77.8	+0.01	Positive pressure
MP-03 red	359	25	1/8/2019 10:27	0.1	0.1	22.3	77.5	0.00	4 Cycles, Methane concentration peaked at 0.4, Probe open to atmosphere (vented)
MP-04 yellow	360	10	1/8/2019 10:12	0	0.1	21.8	78.1	0.00	Probe opened to atmosphere on 11/5/18 (vented)
MP-04 red	361	27	1/8/2019 10:15	0	0.1	21.9	78	-0.02	
MP-05 yellow	362	10	1/8/2019 11:45	0	0.1	22.1	77.8	-0.01	
MP-06 yellow	363	10	1/8/2019 11:33	0	0.2	22.1	77.7	+0.02	Positive pressure
MP-06 orange	364	19	1/8/2019 11:37	0	1.4	21.5	77.1	0.00	
MP-06 red	365	30	1/8/2019 11:40	0	0.1	22.2	77.7	-0.01	
MP-06B yellow	366	11	1/8/2019 11:23	0	1.6	21.1	77.3	0.00	
MP-06B orange	367	22	1/8/2019 11:27	0	2.9	19.8	77.3	0.00	
MP-06B red	368	34	1/8/2019 11:30	0	4.1	18.2	77.7	0.00	
MP-07 yellow	369	9	1/8/2019 11:18	0	4.8	17.5	77.7	-0.01	
MP-07 red	370	18	1/8/2019 11:21	0	4.4	19	76.6	0.00	
MP-8 yellow	371	10	1/8/2019 11:08	0	1.1	21.9	77	0.00	
MP-08 orange	372	30	1/8/2019 11:11	0	2.3	20.5	77.2	-0.02	
MP-08 red	373	50	1/8/2019 11:15	0	4.5	17.3	78.2	0.00	
MP-09 yellow	374	8	1/8/2019 10:59	3.5	2.8	16.8	76.9	+0.03	Methane concentration <5.0%, below the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented), Pump failed during 2nd cycle, Ponding near probe
MP-09 orange	375	22	1/8/2019 11:01	0	0.9	21.8	77.3	-0.03	
MP-10 yellow	376	10	1/8/2019 10:46	0	2.4	20.5	77.1	-0.01	
MP-10 orange	377	23	1/8/2019 10:48	0	3.2	19.4	77.4	-0.02	
MP-10 red	378	38	1/8/2019 10:52	0	6.7	16.5	76.8	-0.02	
Boat Comp.	379	NA	1/8/2019 10:18	0	1.7	20.2	78.1	-0.03	

COMMENTS:

Gas probes with positive pressure

Gas Probes with CH₄%

Gas Collection System was running upon my arrival on 1/8/19

Grass height around 3-4' , mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 2/5/2019 9:30 AM
 Temp (°F): 21⁰F Current Conditions/Rel. Humidity: Cloudy / 80%
 Barometric Pressure (in. Hg): 29.20 Trend: F (circle one)
 Condition of Ground Surface/Recent Precipitation: Snow patches -none
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 2/5/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:30 Field Check – End Time: 11:05

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	2/5/2019 9:56	0.0	12.5	9.8	77.7	-0.20	
MP-01 orange	356	15	2/5/2019 9:59	0.0	15.3	11.3	73.4	-0.10	
MP-02 yellow	357	10	2/5/2019 9:52	0.0	0.1	23.0	76.9	-0.01	Probe open to atmosphere (vented)
MP-03 yellow	358	10	2/5/2019 9:43	0.0	0.1	22.4	77.5	-0.01	
MP-03 red	359	25	2/5/2019 9:49	0.1	0.1	22.9	76.9	+0.01	4 Cycles, Methane concentration peaked at 0.4%, Probe open to atmosphere (vented), Positive pressure
MP-04 yellow	360	10	2/5/2019 9:32	0.0	0.1	21.6	78.3	-0.03	Probe opened to atmosphere on 11/5/18 (vented)
MP-04 red	361	27	2/5/2019 9:34	0.0	0.1	21.7	78.2	-0.04	
MP-05 yellow	362	10	2/5/2019 11:03	0.0	0.1	23.4	76.5	-0.02	
MP-06 yellow	363	10	2/5/2019 10:52	0.0	0.2	23.3	76.5	0.00	
MP-06 orange	364	19	2/5/2019 10:55	0.0	0.7	23.3	76.0	-0.04	
MP-06 red	365	30	2/5/2019 10:58	0.0	0.1	23.5	76.4	-0.01	
MP-06B yellow	366	11	2/5/2019 10:44	0.0	1.1	22.5	76.4	-0.02	
MP-06B orange	367	22	2/5/2019 10:47	0.0	2.0	22.0	76.0	0.00	
MP-06B red	368	34	2/5/2019 10:49	0.0	3.7	20.2	76.1	0.00	
MP-07 yellow	369	9	2/5/2019 10:38	0.0	4.5	19.9	75.6	0.00	
MP-07 red	370	18	2/5/2019 10:40	0.0	3.7	21.0	75.3	-0.04	
MP-8 yellow	371	10	2/5/2019 10:30	0.0	1.0	22.7	76.3	-0.05	
MP-08 orange	372	30	2/5/2019 10:32	0.0	2.2	21.2	76.6	-0.01	
MP-08 red	373	50	2/5/2019 10:34	0.0	4.4	17.9	77.7	-0.02	
MP-09 yellow	374	8	2/5/2019 10:13	4.4	3.8	8.1	83.7	+0.03	Methane concentration <5.0%, below the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented), Pump failed < 1 cycle, Frozen ponded water near probe
MP-09 orange	375	22	2/5/2019 10:15	0.0	4.1	19.3	76.6	-0.06	
MP-10 yellow	376	10	2/5/2019 10:03	0.0	1.9	21.4	76.7	-0.03	
MP-10 orange	377	23	2/5/2019 10:05	0.0	2.8	20.1	77.1	-0.04	
MP-10 red	378	38	2/5/2019 10:08	0.0	5.2	19.2	75.6	-0.01	
Boat Comp.	379	NA	2/5/2019 9:37	0.0	0.1	21.9	78.0	-0.03	

COMMENTS:

Gas probes with positive pressure

Gas Probes with CH₄%

Gas Collection System was running upon my arrival on 2/5/19

Grass height around 3-4' , mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 3/8/2019 9:30 AM
 Temp (°F): 33° F Current Conditions/Rel. Humidity: Cloudy / 66%
 Barometric Pressure (in. Hg): 29.40 Trend: F (circle one)
 Condition of Ground Surface/Recent Precipitation: Snowcovered -none
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 3/8/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:30 Field Check – End Time: 11:20

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	3/8/2019 10:06	0.0	7.5	13.0	79.4	-0.04	
MP-01 orange	356	15	3/8/2019 10:10	0.0	14.7	8.0	77.4	0.00	
MP-02 yellow	357	10	3/8/2019 9:59	0.0	0.2	22.7	77.1	0.00	Probe open to atmosphere (vented)
MP-03 yellow	358	10	3/8/2019 9:48	0.0	0.1	22.7	77.2	+0.01	Positive pressure
MP-03 red	359	25	3/8/2019 9:53	0.1	0.0	22.8	77.0	-0.02	4 Cycles, Methane concentration peaked at 2.9%, Probe open to atmosphere (vented)
MP-04 yellow	360	10	3/8/2019 9:38	0.0	0.1	22.1	77.8	+0.03	Probe opened to atmosphere on 11/5/18 (vented), Positive pressure
MP-04 red	361	27	3/8/2019 9:40	0.0	0.1	22.2	77.7	0.00	
MP-05 yellow	362	10	3/8/2019 11:17	0.0	0.1	22.8	77.2	+0.04	Positive pressure
MP-06 yellow	363	10	3/8/2019 11:01	0.0	0.2	22.3	77.4	-0.01	
MP-06 orange	364	19	3/8/2019 11:03	0.0	0.1	22.6	77.3	+0.03	Positive pressure
MP-06 red	365	30	3/8/2019 11:05	0.0	0.1	22.6	77.3	+0.01	Positive pressure
MP-06B yellow	366	11	3/8/2019 10:54	0.0	0.7	21.7	77.5	0.00	
MP-06B orange	367	22	3/8/2019 10:56	0.0	1.1	21.5	77.4	+0.01	Positive pressure
MP-06B red	368	34	3/8/2019 10:58	0.0	3.1	20.2	76.7	-0.01	
MP-07 yellow	369	9	3/8/2019 10:49	0.0	3.7	17.8	78.3	+0.01	Positive pressure
MP-07 red	370	18	3/8/2019 10:51	0.0	3.4	19.9	76.7	0.00	
MP-8 yellow	371	10	3/8/2019 10:40	0.0	1.0	21.8	77.2	0.00	
MP-08 orange	372	30	3/8/2019 10:42	0.0	2.4	20.4	77.2	-0.01	
MP-08 red	373	50	3/8/2019 10:44	0.0	4.2	17.3	78.5	0.00	
MP-09 yellow	374	8	3/8/2019 10:26	0.8	0.1	22.2	76.2	+0.03	Methane concentration <5.0%, below the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented), Frozen ponded water near probe
MP-09 orange	375	22	3/8/2019 10:28	0.0	4.4	17.9	77.7	0.00	
MP-10 yellow	376	10	3/8/2019 10:14	0.0	1.9	20.4	77.6	0.00	
MP-10 orange	377	23	3/8/2019 10:16	0.0	3.0	19.9	77.2	0.00	
MP-10 red	378	38	3/8/2019 10:18	0.0	6.5	16.2	77.3	-0.01	
Boat Comp.	379	NA	3/8/2019 9:44	0.0	0.2	22.4	77.4	-0.03	

COMMENTS:

Gas probes with positive pressure
 Gas Probes with CH₄%

Gas Collection System was running upon my arrival on 3/8/19

Grass height around 3-4' , mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 4/12/2019 9:30 AM
 Temp (°F): 50°F Current Conditions/Rel. Humidity: Sunny / 32%
 Barometric Pressure (in. Hg): 29.30 Trend: F S G (circle one)
 Condition of Ground Surface/Recent Precipitation: Damp -none
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 4/12/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:30 Field Check – End Time: 11:20

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	4/12/2019 9:58	0.0	8.2	13.0	78.8	-0.04	
MP-01 orange	356	15	4/12/2019 10:01	0.0	15.3	7.1	77.6	-0.05	
MP-02 yellow	357	10	4/12/2019 9:54	0.0	2.6	19.2	78.2	0.00	Probe open to atmosphere (vented)
MP-03 yellow	358	10	4/12/2019 9:42	0.0	0.1	21.3	78.6	+0.03	Positive pressure
MP-03 red	359	25	4/12/2019 9:48	0.2	0.1	22.0	77.7	-0.01	4 Cycles, Methane concentration peaked at 1.5%, Probe open to atmosphere (vented)
MP-04 yellow	360	10	4/12/2019 9:35	0.0	0.1	20.9	79.0	-0.02	Probe opened to atmosphere on 11/5/18 (vented)
MP-04 red	361	27	4/12/2019 9:37	0.0	0.1	21.0	78.9	0.00	
MP-05 yellow	362	10	4/12/2019 10:55	0.0	0.1	21.7	78.2	+0.04	Positive pressure
MP-06 yellow	363	10	4/12/2019 10:46	0.0	0.2	21.3	78.5	0.00	
MP-06 orange	364	19	4/12/2019 10:48	0.0	0.1	21.6	78.3	0.00	
MP-06 red	365	30	4/12/2019 10:50	0.0	0.1	21.7	78.2	-0.03	
MP-06B yellow	366	11	4/12/2019 10:38	0.0	0.1	21.3	78.6	-0.02	
MP-06B orange	367	22	4/12/2019 10:40	0.0	0.6	20.5	78.9	+0.01	Positive pressure
MP-06B red	368	34	4/12/2019 10:43	0.0	1.5	19.8	78.7	-0.01	
MP-07 yellow	369	9	4/12/2019 10:33	0.0	3.6	17.4	79.0	0.00	
MP-07 red	370	18	4/12/2019 10:35	0.0	3.0	18.4	78.6	-0.02	
MP-8 yellow	371	10	4/12/2019 10:24	0.0	0.4	22.0	77.6	-0.02	
MP-08 orange	372	30	4/12/2019 10:26	0.0	1.2	21.2	77.6	-0.02	
MP-08 red	373	50	4/12/2019 10:30	0.0	3.8	17.5	78.7	0.00	
MP-09 yellow	374	8	4/12/2019 10:13	2.1	2.4	17.3	78.2	+0.02	Methane concentration <5.0%, below the lower explosive limit, Positive Pressure, Probe open to atmosphere (vented)
MP-09 orange	375	22	4/12/2019 10:16	0.0	0.1	22.3	77.6	0.00	
MP-10 yellow	376	10	4/12/2019 10:04	0.0	2.1	19.9	78.0	0.00	
MP-10 orange	377	23	4/12/2019 10:06	0.0	2.9	18.7	78.4	-0.02	
MP-10 red	378	38	4/12/2019 10:09	0.0	12.1	10.2	77.7	-0.03	
Boat Comp.	379	NA	4/12/2019 9:39	0.0	1.8	19.6	78.6	-0.01	

COMMENTS:

Gas probes with positive pressure

Gas Probes with CH₄%

Gas Collection System was running upon my arrival on 4/12/19

Grass height around 3-4' , mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 5/15/2019 9:45 AM
 Temp (°F): 67°F Current Conditions/Rel. Humidity: Mostly Sunny / 50%
 Barometric Pressure (in. Hg): 29.20 Trend: FC (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry-None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 5/15/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:45 Field Check – End Time: 11:10

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	5/15/2019 10:08	0.0	9.5	7.0	83.5	-0.03	
MP-01 orange	356	15	5/15/2019 10:12	0.0	11.9	9.3	78.8	-0.01	
MP-02 yellow	357	10	5/15/2019 10:04	0.0	1.8	19.1	79.1	-0.01	Probe open to atmosphere (vented)
MP-03 yellow	358	10	5/15/2019 9:55	0.0	0.1	19.9	80.0	+0.03	Positive pressure
MP-03 red	359	25	5/15/2019 10:01	0.1	0.1	20.2	79.6	-0.02	4 Cycles, Methane concentration peaked at 0.2%, Probe open to atmosphere (vented)
MP-04 yellow	360	10	5/15/2019 9:47	0.0	0.2	20.0	79.8	-0.02	Probe opened to atmosphere on 11/5/18 (vented)
MP-04 red	361	27	5/15/2019 9:50	0.0	0.1	20.0	79.9	-0.02	
MP-05 yellow	362	10	5/15/2019 11:08	0.0	0.0	20.1	79.9	0.00	
MP-06 yellow	363	10	5/15/2019 10:59	0.0	0.5	19.3	80.2	0.00	
MP-06 orange	364	19	5/15/2019 11:01	0.0	0.0	19.9	80.1	0.00	
MP-06 red	365	30	5/15/2019 11:04	0.0	0.0	20.0	80.0	-0.01	
MP-06B yellow	366	11	5/15/2019 10:48	0.0	0.2	19.0	80.8	+0.02	Positive pressure
MP-06B orange	367	22	5/15/2019 10:50	0.0	0.6	18.6	80.8	-0.01	
MP-06B red	368	34	5/15/2019 10:56	0.0	1.5	18.3	80.2	0.00	
MP-07 yellow	369	9	5/15/2019 10:43	0.0	3.7	14.1	82.2	-0.02	
MP-07 red	370	18	5/15/2019 10:45	0.0	3.3	15.8	80.9	0.00	
MP-8 yellow	371	10	5/15/2019 10:34	0.0	0.4	18.9	80.7	+0.01	Positive pressure
MP-08 orange	372	30	5/15/2019 10:36	0.0	0.9	18.8	80.3	0.00	
MP-08 red	373	50	5/15/2019 10:40	0.0	3.1	16.0	80.9	0.00	
MP-09 yellow	374	8	5/15/2019 10:26	1.6	0.5	18.1	79.8	-0.01	1 Cycle, Methane concentration <5.0%, below the lower explosive limit, Probe open to atmosphere (vented)
MP-09 orange	375	22	5/15/2019 10:28	0.0	0.1	19.4	80.5	-0.02	
MP-10 yellow	376	10	5/15/2019 10:16	0.0	2.2	17.2	80.6	-0.01	
MP-10 orange	377	23	5/15/2019 10:18	0.0	3.8	15.4	80.8	0.00	
MP-10 red	378	38	5/15/2019 10:22	0.0	9.4	11.0	79.6	+0.01	Positive pressure
Boat Comp.	379	NA	5/15/2019 9:52	0.0	1.2	19.0	79.8	-0.01	

COMMENTS:

Gas probes with positive pressure

Gas Probes with CH₄%

Gas Collection System was running upon my arrival on 5/15/19

Grass height around 3-4' , mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS PROBES MONITORING LOG**

Date & Time: 6/3/2019 12:45 PM

Temp (°F): 65°F Current Conditions/Rel. Humidity: Partly Cloudy / 45%

Barometric Pressure (in. Hg): 30.14 Trend: F R (circle one)

Condition of Ground Surface/Recent Precipitation: Dry-None

Monitored By: Scott Freimark (ESC)

Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764

Date Meter Last Calibrated: 6/3/2019

Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%

Field Check – Start Time: 12:45 Field Check – End Time: 14:25

Probe ID	ID No.	Depth	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Vacuum/ Pressure (in. water)	Comments
MP-01 yellow	355	10	6/3/2019 13:10	0.0	14.6	1.4	84.0	0.00	
MP-01 orange	356	15	6/3/2019 13:12	0.0	0.1	20.2	79.7	-0.01	
MP-02 yellow	357	10	6/3/2019 13:06	0.0	0.2	20.2	79.6	0.00	Probe open to atmosphere (vented)
MP-03 yellow	358	10	6/3/2019 12:59	0.0	0.0	20.3	79.7	+0.04	Positive pressure
MP-03 red	359	25	6/3/2019 13:02	0.0	0.0	20.4	79.6	-0.01	4 Cycles, Methane concentration peaked at 0.1%, Probe open to atmosphere (vented)
MP-04 yellow	360	10	6/3/2019 12:48	0.0	0.5	19.6	79.9	-0.01	Probe opened to atmosphere on 11/5/18 (vented)
MP-04 red	361	27	6/3/2019 12:51	0.0	0.0	20.5	79.5	-0.01	
MP-05 yellow	362	10	6/3/2019 14:21	0.0	0.0	21.5	78.5	0.00	
MP-06 yellow	363	10	6/3/2019 14:07	0.0	0.8	20.6	78.6	0.00	
MP-06 orange	364	19	6/3/2019 14:09	0.0	0.0	21.4	78.6	-0.02	
MP-06 red	365	30	6/3/2019 14:13	0.0	0.0	21.4	78.6	+0.01	Positive pressure
MP-06B yellow	366	11	6/3/2019 13:58	0.0	0.2	20.3	79.5	0.00	
MP-06B orange	367	22	6/3/2019 14:01	0.0	1.0	19.3	79.7	-0.01	
MP-06B red	368	34	6/3/2019 14:04	0.0	1.6	19.5	78.9	-0.01	
MP-07 yellow	369	9	6/3/2019 13:52	0.0	4.3	13.6	82.1	+0.01	Positive pressure
MP-07 red	370	18	6/3/2019 13:55	0.0	3.7	16.4	79.9	-0.01	
MP-8 yellow	371	10	6/3/2019 13:38	0.0	0.5	20.0	79.5	+0.02	Positive pressure
MP-08 orange	372	30	6/3/2019 13:40	0.0	0.8	19.5	79.7	0.00	
MP-08 red	373	50	6/3/2019 13:45	0.1	2.7	17.6	79.6	+0.01	Positive pressure
MP-09 yellow	374	8	6/3/2019 13:26	2.3	1.7	11.7	84.3	-0.01	1 Cycle, Methane concentration <5.0%, below the lower explosive limit, Probe open to atmosphere (vented)
MP-09 orange	375	22	6/3/2019 13:32	0.0	0.1	20.2	79.7	-0.03	
MP-10 yellow	376	10	6/3/2019 13:16	0.0	2.3	16.9	80.8	+0.01	Positive pressure
MP-10 orange	377	23	6/3/2019 13:19	0.0	4.3	14.6	81.1	-0.01	
MP-10 red	378	38	6/3/2019 13:22	0.0	8.3	12.6	79.1	0.00	
Boat Comp.	379	NA	6/3/2019 12:54	0.0	0.4	20.1	79.5	+0.01	Positive pressure

COMMENTS:

Gas probes with positive pressure

Gas Probes with CH4%

Gas Collection System was running upon my arrival on 5/15/19

Grass height around 3-4' , mowing should be scheduled early spring

Attachment 3

Gas Extraction System Monitoring Reports

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 7/10/2018 1:15 PM
 Temp (°F): 82°F Current Conditions/Rel. Humidity: Sunny / 37%
 Barometric Pressure (in. Hg): 29.20 Trend: F S R (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 7/10/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 13:15 Field Check – End Time: 14:45

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
HMP-3	7/10/2018 13:16	15.6	16.5	4.8	63.1	NA	NA	-11.67	NA	NA	Low methane concentration
EW-4	7/10/2018 13:22	20.7	19.9	0.2	59.2	-1.66	-1.68	-11.26	No change	5	NA
EW-24	7/10/2018 13:27	9.8	17.5	0.5	72.2	-0.44	-0.45	-11.48	No change	<1	Low methane concentration, manhole cover doesn't close
EW-25	7/10/2018 13:33	10.2	18.3	0.6	70.9	-0.80	-0.80	-10.85	No change	<1	Low methane concentration, manhole cover doesn't close
EW-12	7/10/2018 13:36	11.1	17.3	0.9	70.7	-1.51	-1.52	-11.77	No change	<1	Low methane concentration
EW-13	7/10/2018 13:41	0.8	14.2	5.3	79.7	-0.59	-0.60	-11.12	No change	<1	Low methane concentration, High oxygen concentration, manhole cover doesn't close
HMP-4	7/10/2018 13:47	16.8	16.0	6.1	61.1	NA	NA	-11.65	NA	NA	Low methane concentration, High oxygen concentration
EW-14	7/10/2018 13:54	7.1	10.6	8.3	74.0	-9.72	-10.06	-11.52	8/10 Increased	NA	Low methane concentration, High oxygen concentration, increased to assist with gas probe MP-09 methane
G-4	7/10/2018 14:01	2.3	1.8	17.5	78.4	-3.58	-3.58	-10.58	No Change	1	Low methane concentration, high oxygen concentration
EW-15	7/10/2018 14:05	5.5	15.2	3.2	76.1	-2.92	-2.91	-12.31	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open assist with gas probe MP-09 methane, orifice plate issue
G-3	7/10/2018 14:09	14.9	8.4	12.7	64.0	-5.26	-5.19	-10.54	No change	<1	Low methane concentration, high oxygen concentration, valve issue, Manhole cover doesn't close
EW-16	7/10/2018 14:15	7.7	7.5	13.7	71.1	-4.66	-4.66	-11.9	8/10 Increased	NA	Low methane concentration, high oxygen concentration, increased to assist with gas probe MP-09 methane, orifice plate issue
HMP-5	7/10/2018 14:19	27.7	22.4	2.8	47.1	NA	NA	-11.35	NA	NA	
EW-17	7/10/2018 14:23	21.1	20.5	5.8	52.6	-7.00	-7.01	-11.25	No Change	3	NA
CS-2	No readings collected , no sampling port installed										
Blower - Inlet (Final)	7/10/2018 14:40	19.5	18.2	4.4	57.9	NA	NA	-17.57	NA	+360	
Blower - Outlet (Final)	7/10/2018 14:42	19.2	17.9	4.6	58.3	NA	NA	+9.78	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH4 quality >50%

Gas wells with low CH4 quality <20%

Gas Collection System was running upon my arrival on 7/10/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 7/10/2018 11:10 AMTemp (°F): 80°FCurrent Conditions/Rel. Humidity: Sunny / 37%Barometric Pressure (in. Hg): 29.20Trend: F R (circle one)Condition of Ground Surface/Recent Precipitation: Dry - NoneMonitored By: Scott Freimark (ESC)Gas Detector Make and Model No.: GEM 5000Serial No.: G501764Date Meter Last Calibrated: 7/10/2018Calibration Methane Span Gas: 15%Calibration Oxygen Span Gas: 4%Field Check – Start Time: 11:10Field Check – End Time: 12:20

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	7/10/2018 12:23	28.3	21.6	0.5	49.6	-7.04	-7.02	-13.09	10 FO	NA	Orifice plate issue
EW-8	7/10/2018 12:29	27.5	22.0	3.9	46.6	-13.99	-14.06	-14.66	10 FO	NA	Valve issue
G-5	7/10/2018 12:37	19.1	18.2	2.5	60.2	-3.64	-3.67	-14.99	No change	3 NA	Low methane concentration
G-6	7/10/2018 12:42	14.5	9.0	11.5	65.0	-0.70	-0.71	-13.56	No change	<1 NA	Low methane concentration, high oxygen concentration
G-7	7/10/2018 12:47	2.9	2.5	16.8	77.8	-0.15	-0.15	-12.50	No change	<1 NA	Low methane concentration, high oxygen concentration
G-8	7/10/2018 12:51	11.1	7.5	14.2	67.2	-0.73	-0.72	-13.04	No change	<1 NA	Low methane concentration, high oxygen concentration
HMP-2	7/10/2018 12:56	17.0	17.5	4.5	61.0	NA	NA	-12.81	NA	NA	Low methane concentration, casing needs repair Pro
EW-10	7/10/2018 13:01	34.7	27.9	0.1	37.3	-1.49	-1.49	-13.25	10 FO	NA	Manhole cover doesn't close, orifice plate issue.
EW-11	7/10/2018 13:08	0.8	15.1	3.9	80.2	-0.10	-0.10	-12.44	No change	1 NA	Low methane concentration, Manhole cover doesn't close
EW-23	7/10/2018 13:13	1.1	5.6	14.4	78.9	-0.30	-0.31	-11.50	No change	<1 NA	Low methane concentration, high oxygen concentration
CS-1	7/10/2018 14:36	0.5	0.4	19.8	79.3	NA	NA	-13.20	NA	NA	Low methane concentration, high oxygen concentration
Blower - Inlet (Initial)	7/10/2018 11:02	18.5	18.6	4.1	58.8	NA	NA	-16.81	NA	+360	
Blower - Outlet (Initial)	7/10/2018 11:04	18.4	18.4	4.2	59.0	NA	NA	+10.74	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH₄ quality >50%Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 7/10/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 7/10/2018 11:10 AM
 Temp (°F): 80°F Current Conditions/Rel. Humidity: Sunny / 37%
 Barometric Pressure (in. Hg): 29.20 Trend: F S (R) (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 7/10/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check - Start Time: 11:10 Field Check - End Time: 12:20

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	7/10/2018 11:09	31.7	24.8	0.2	43.3	-1.52	-1.52	-14.70	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	7/10/2018 11:13	12.1	21.4	1.5	65.0	-2.33	-2.33	-4.90	5 No change	NA	Low methane concentration, Low header vacuum
EW-2	7/10/2018 11:16	11.4	21.5	0.4	66.7	-2.24	-2.24	-2.25	10 FO	NA	Low methane concentration, Low header vacuum, No protective cover
HMP-8	7/10/2018 11:19	21.2	20.4	3.3	55.1	NA	NA	-15.84	NA	NA	
EW-1	7/10/2018 11:24	26.3	25.3	0.2	48.2	-1.53	-1.53	-11.44	10 FO	NA	Orifice plate issue, Mice in manhole
EW-22	7/10/2018 11:29	2.0	14.2	6.2	77.6	-3.52	-3.52	-9.72	2 No change	NA	Low methane concentration, High oxygen concentration, No valve adjustment to assist with gas probe MP-02 methane issue, Mice in manhole
EW-21	7/10/2018 11:35	12.0	15.9	5.3	66.8	-2.24	-2.31	-10.32	4 No change	NA	Low methane concentration, High oxygen concentration, No valve adjustment to assist with gas probe MP-02 methane issue, Mice in manhole
G-1	7/10/2018 11:51	22.9	13.1	9.1	54.9	-1.71	-1.70	-10.20	10 FO	NA	High oxygen concentration, orifice plate issue, Manhole cover doesn't close
HMP-7	7/10/2018 11:44	23.0	23.5	0.5	53.0	NA	NA	-10.59	NA	NA	
EW-20	7/10/2018 11:58	19.5	24.2	0.6	55.7	-4.75	-4.73	-8.79	10 FO	NA	Low methane concentration, Manhole removed, Orifice plate issue
EW-19	7/10/2018 12:02	23.5	24.1	0.3	52.1	-5.38	-5.28	-9.25	6 No change	NA	Manhole removed
G-2	7/10/2018 12:08	24.7	16.0	8.0	51.3	-1.50	-1.52	-8.10	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue
EW-18	7/10/2018 12:12	36.9	27.1	0.3	35.7	-1.81	-1.85	-8.85	10 FO	NA	Manhole removed, Orifice plate issue
HMP-6	7/10/2018 12:17	24.8	20.5	3.9	50.8	NA	NA	-8.44	NA	NA	
CS-3	7/10/2018 11:40	0.0	0.0	18.5	81.5	NA	NA	-10.43	NA	NA	No methane concentration, high oxygen concentration
Blower - Inlet (Initial)	7/10/2018 11:02	18.5	18.6	4.1	58.8	NA	NA	-16.81	NA	+360	
Blower - Outlet (Initial)	7/10/2018 11:04	18.4	18.4	4.2	59.0	NA	NA	+10.74	NA	+360	

COMMENTS:

- Gas wells with positive pressure
 - Gas wells with low header pressure <10.0"
 - Gas wells with high CH₄ quality >50%
 - Gas wells with low CH₄ quality <20%
- FO = Valve full open
- Gas Collection System was running upon my arrival on 7/10/18
- Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
- Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
- Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 8/3/2018 1:35 PM
 Temp (°F): 79°F Current Conditions/Rel. Humidity: Mostly Sunny / 51%
 Barometric Pressure (in. Hg): 29.10 Trend: ↘ (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 8/3/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 13:35 Field Check – End Time: 14:50

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
HMP-3	8/3/2018 13:38	14.3	16.9	5.0	63.8	NA	NA	-10.53	NA	NA	Low methane concentration
EW-4	8/3/2018 13:45	20.7	21.1	0.2	58.0	-1.43	-1.44	-10.31	No change	5	
EW-24	8/3/2018 13:50	8.8	17.9	0.7	72.6	-0.38	-0.38	-10.42	No change	<1	Low methane concentration, manhole cover doesn't close
EW-25	8/3/2018 13:54	11.1	19.5	0.3	69.1	-0.61	-0.61	-10.13	No change	<1	Low methane concentration, manhole cover doesn't close
EW-12	8/3/2018 13:59	11.8	18.9	0.4	68.9	-1.20	-1.19	-10.12	No change	<1	Low methane concentration
EW-13	8/3/2018 14:05	1.0	16.2	3.1	79.7	-0.56	-0.94	-10.21	Increased	<1/1	Low methane concentration, High oxygen concentration, manhole cover doesn't close, Increased to assist with gas probe MP-09 methane
HMP-4	8/3/2018 14:08	15.3	16.4	6.3	62.0	NA	NA	-10.19	NA	NA	Low Methane concentration, High oxygen concentration
EW-14	8/3/2018 14:12	7.0	11.0	8.0	74.0	-9.81	-9.80	-10.18	10FO	NA	Low methane concentration, High oxygen concentration, valve fully open to assist with gas probe MP-09 methane
G-4	8/3/2018 14:25	1.6	1.2	17.5	79.7	-1.32	-2.23	-10.42	Increased	1/2	Low methane concentration, high oxygen concentration, Increased to assist with gas probe MP-09 methane
EW-15	8/3/2018 14:29	5.0	16.0	3.0	76.0	-2.24	-2.23	-10.27	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane, orifice plate issue
G-3	8/3/2018 14:36	7.7	4.8	14.8	72.7	-4.44	-6.43	-10.10	Increased	<1/1	Low methane concentration, high oxygen concentration, valve issue, Manhole cover doesn't close, Increased to assist with gas probe MP-09 methane
EW-16	8/3/2018 14:41	5.9	7.3	13.2	73.6	-3.17	-3.11	-10.33	10FO	NA	Low methane concentration, high oxygen concentration, valve fully open to assist with gas probe MP-09 methane, orifice plate issue
HMP-5	8/3/2018 14:45	24.9	23.3	2.6	49.2	NA	NA	-10.48	NA	NA	
EW-17	8/3/2018 14:49	19.1	22.3	4.7	53.9	-5.14	-6.65	-10.30	Increased	3/4	Increased to assist with gas probe MP-09 methane
CS-2	No readings collected, no sampling port installed										Counter:1,033
Blower - Inlet (Final)	8/3/2018 15:04	17.7	18.8	4.2	59.3	NA	NA	-16.49	NA	+360	
Blower - Outlet (Final)	8/3/2018 15:07	17.9	18.9	4.2	59	NA	NA	+10.04	NA	+360	

COMMENTS:

- Gas wells with positive pressure
- Gas wells with low header pressure <10.0"
- Gas wells with high CH4 quality >50%
- Gas wells with low CH4 quality <20%

Gas Collection System was running upon my arrival on 08/03/18
 Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
 Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
 Grass height around 3-4', mowing should be scheduled soon
 Leachate loadout area flooded with runoff across the road into the field

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 8/3/2018 12:45 PM
 Temp (°F): 77°F Current Conditions/Rel. Humidity: Mostly Sunny / 51%
 Barometric Pressure (in. Hg): 29.10 Trend: ↔ (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 8/3/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 12:45 Field Check – End Time: 15:00

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	8/3/2018 12:51	29.3	23.6	0.2	46.9	-5.95	-5.96	-12.19	10 FO	NA	Orifice plate issue
EW-8	8/3/2018 13:00	30.3	22.2	4.3	43.2	-11.29	-12.63	-12.25	10 FO	NA	Valve issue
G-5	8/3/2018 13:04	19.6	20.0	2.4	58.0	-2.84	-2.85	-12.63	3 No change	NA	Low methane concentration
G-6	8/3/2018 13:09	17.6	11.7	10.1	60.6	-0.40	-0.41	-11.40	<1 No change	NA	Low methane concentration, high oxygen concentration
G-7	8/3/2018 13:13	2.1	2.2	16.8	78.9	-0.12	-0.11	-10.39	<1 No change	NA	Low methane concentration, high oxygen concentration
G-8	8/3/2018 13:20	11.3	8.4	13.7	66.6	-0.47	-0.48	-10.20	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	8/3/2018 13:22	15.8	18.1	4.4	61.7	NA	NA	-10.47	NA	NA	Low methane concentration, casing needs repair Pro
EW-10	8/3/2018 13:26	34.2	29.0	0.2	36.6	-1.30	-1.29	-11.94	10 FO	NA	Manhole cover doesn't close, orifice plate issue.
EW-11	8/3/2018 13:30	0.6	18.5	0.5	80.4	-0.14	-0.15	-10.65	1 No change	NA	Low methane concentration, Manhole cover doesn't close
EW-23	8/3/2018 13:34	1.2	6.9	13.0	78.9	-0.30	-0.31	-10.36	<1 No change	NA	Low methane concentration, high oxygen concentration
CS-1	8/3/2018 14:59	0.0	0.0	18.8	81.2	NA	NA	-10.68	NA	NA	Low methane concentration, high oxygen concentration Counter.1,953
Blower - Inlet (Initial)	8/3/2018 9:24	19.0	20.0	4.0	57.0	NA	NA	-16.48	NA	+360	
Blower - Outlet (Initial)	8/3/2018 9:26	18.9	19.9	4.1	57.1	NA	NA	+10.08	NA	+360	

COMMENTS:

- Gas wells with positive pressure
- Gas wells with low header pressure <10.0"
- Gas wells with high CH4 quality >50%
- Gas wells with low CH4 quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 08/03/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled soon

Leachate loadout area flooded with runoff across the road into the field

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 8/3/2018 11:15 AM
 Temp (°F): 73°F Current Conditions/Rel. Humidity: Mostly Sunny / 65%
 Barometric Pressure (in. Hg): 29.10 Trend: ↻ (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 8/3/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 11:15 Field Check – End Time: 12:40

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	8/3/2018 11:19	31.6	25.7	0.2	42.5	-1.32	-1.36	-13.45	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	8/3/2018 11:23	12.1	22.5	1.3	64.1	-1.91	-1.91	-4.00	5 No change	NA	Low methane concentration, Low header vacuum
EW-2	8/3/2018 11:25	12.3	22.8	0.4	64.5	-2.00	-2.00	-2.15	10 FO	NA	Low methane concentration, Low header vacuum, No protective cover
HMP-8	8/3/2018 11:29	19.2	21.5	3.2	56.1	NA	NA	-10.55	NA	NA	
EW-1	8/3/2018 11:33	24.4	26.5	0.1	49.0	-1.51	-1.53	-12.25	10 FO	NA	Orifice plate issue, Mice in manhole
EW-22	8/3/2018 11:38	3.0	15.7	5.3	76.0	-3.65	-4.25	-9.58	2/3 Increased	NA	Low methane concentration, High oxygen concentration, Increased to assist with gas probe MP-02 methane issue, Mice in manhole
EW-21	8/3/2018 11:46	10.6	15.4	6.8	67.2	-2.77	-3.60	-10.10	4/5 Increased	NA	Low methane concentration, High oxygen concentration, Increased to assist with gas probe MP-02 methane issue, Mice in manhole
G-1	8/3/2018 14:54	13.3	8.0	13.5	65.2	-1.83	-1.80	-10.11	10 FO	NA	High oxygen concentration, orifice plate issue, Manhole cover doesn't close
HMP-7	8/3/2018 12:17	18.4	23.5	0.4	57.7	NA	NA	-10.22	NA	NA	
EW-20	8/3/2018 12:27	17.5	25.8	0.7	56.0	-4.49	-4.54	-8.51	10 FO	NA	Low methane concentration, Manhole removed, Orifice plate issue
EW-19	8/3/2018 12:30	18.9	23.8	0.3	57.0	-4.26	-5.26	-9.06	6 No change	NA	Manhole removed
G-2	8/3/2018 12:34	22.3	16.3	8.1	53.3	-1.71	-1.64	-8.11	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue
EW-18	8/3/2018 12:38	34.0	28.0	0.3	37.7	-2.00	-2	-8.50	10 FO	NA	Manhole removed, Orifice plate issue
HMP-6	8/3/2018 12:43	21.6	20.9	4.0	53.5	NA	NA	-8.42	NA	NA	
CS-3	8/3/2018 12:19	0.0	0.0	18.0	82.0	NA	NA	-9.34	NA	NA	No methane concentration, high oxygen concentration, Counter-631
Blower - Inlet (Initial)	8/3/2018 9:24	19.0	20.0	4.0	57.0	NA	NA	-16.48	NA	+360	
Blower - Outlet (Initial)	8/3/2018 9:26	18.9	19.9	4.1	57.1	NA	NA	+10.08	NA	+360	

COMMENTS:

- Gas wells with positive pressure
 - Gas wells with low header pressure <10.0"
 - Gas wells with high CH₄ quality >50%
 - Gas wells with low CH₄ quality <20%
- FO = Valve full open
- Gas Collection System was running upon my arrival on 08/03/18
- Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
- Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
- Grass height around 3'-4', mowing should be scheduled soon
- Replaced the monitoring port at G-1 may be the reason for lower gas quality
- Leachate loadout area flooded with runoff across the road into the field

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 9/6/2018 1:20 PM
 Temp (°F): 66°F Current Conditions/Rel. Humidity: Partly Sunny / 73%
 Barometric Pressure (in. Hg): 29.40 Trend: ↔ (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 9/6/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 13:20 Field Check – End Time: 14:30

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
HMP-3	9/6/2018 13:25	14.2	17.5	5.0	63.3	NA	NA	-10.37	NA	NA	Low methane concentration, High oxygen concentration
EW-4	9/6/2018 13:28	22.2	22.2	0.1	55.5	-1.58	-1.59	-10.21	No change	5 NA	
EW-24	9/6/2018 13:32	7.1	17.7	1.5	73.7	-0.40	-0.39	-10.08	No change	<1 NA	Low methane concentration, manhole cover doesn't close
EW-25	9/6/2018 13:36	10.8	20.3	0.4	68.5	-0.80	-0.80	-10.12	No change	<1 NA	Low methane concentration, manhole cover doesn't close
EW-12	9/6/2018 13:40	14.9	20.4	0.1	64.6	-1.32	-1.33	-10.10	No change	<1 NA	Low methane concentration
EW-13	9/6/2018 13:52	0.6	13.8	5.9	79.7	-1.01	-0.99	-10.10	No change	1 NA	Low methane concentration, High oxygen concentration, manhole cover doesn't close. No valve adjustment to assist with gas probe MP-09 methane
HMP-4	9/6/2018 13:55	15.1	17.0	6.3	61.6	NA	NA	-10.03	NA	NA	Low Methane concentration, High oxygen concentration
EW-14	9/6/2018 13:59	15.8	15.3	6.6	62.3	-8.59	-8.58	-10.02	10FO	NA	Low methane concentration, High oxygen concentration, valve fully open to assist with gas probe MP-09 methane
G-4	9/6/2018 14:04	1.2	1.2	18.9	78.7	-3.00	-3.01	-10.11	No change	2 NA	Low methane concentration, high oxygen concentration, No valve adjustment to assist with gas probe MP-09 methane
EW-15	9/6/2018 14:08	6.3	16.8	2.7	74.2	-2.75	-2.73	-10.24	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane, orifice plate issue
G-3	9/6/2018 14:14	29.3	28.3	0.2	42.2	-7.05	-8.08	-10.08	Increased	1/2 NA	Low methane concentration, high oxygen concentration, valve issue, Manhole cover doesn't close, Increased to assist with gas probe MP-09 methane
EW-16	9/6/2018 14:18	4.7	6.3	14.7	74.3	-5.78	-5.80	-10.22	10FO	NA	Low methane concentration, high oxygen concentration, valve fully open to assist with gas probe MP-09 methane, orifice plate issue
HMP-5	9/6/2018 14:22	22.5	23.0	2.7	51.8	NA	NA	-10.15	NA	NA	
EW-17	9/6/2018 14:27	24.7	26.2	1.2	47.9	-8.12	-9.05	-10.54	Increased	4/5 NA	Increased to assist with gas probe MP-09 methane
CS-2	No readings collected, no sampling port installed										Counter:1,394
Blower - Inlet (Final)	9/6/2018 14:50	18.1	19.8	4.0	58.1	NA	NA	-16.65	NA	+360	
Blower - Outlet (Final)	9/6/2018 14:55	17.9	19.3	4.2	58.6	NA	NA	+10.54	NA	+360	

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH ₄ quality >50%
Gas wells with low CH ₄ quality <20%

Gas Collection System was running upon my arrival on 09/06/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled soon

Leachate loadout area flooded

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 9/6/2018 12:30 PM

Temp (°F): 66°F

Current Conditions/Rel. Humidity: Partly Sunny / 73%

Barometric Pressure (in. Hg): 29.40

Trend: ↻ (circle one)

Condition of Ground Surface/Recent Precipitation:

Dry - None

Monitored By: Scott Freimark (ESC)

Gas Detector Make and Model No.:

GEM 5000

Serial No.:

G501764

Date Meter Last Calibrated:

9/6/2018

Calibration Methane Span Gas:

15%

Calibration Oxygen Span Gas:

4%

Field Check - Start Time:

12:30

Field Check - End Time:

14:55

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	9/6/2018 12:30	31.2	25.0	0.1	43.7	-5.87	-5.89	-11.96	10 FO	NA	Orifice plate issue
EW-8	9/6/2018 12:35	40.6	26.1	0.1	33.2	-11.57	-12.51	-13.01	10 FO	NA	Valve issue
G-5	9/6/2018 12:39	24.5	21.4	2.5	51.6	-2.93	-3.51	-12.55	3/4 Increased	NA	
G-6	9/6/2018 12:51	20.3	13.4	10.0	56.3	-0.50	-0.50	-11.69	<1 No change	NA	High oxygen concentration
G-7	9/6/2018 12:56	2.7	2.7	18.0	76.6	-0.13	-0.11	-10.39	<1 No change	NA	Low methane concentration, high oxygen concentration
G-8	9/6/2018 13:00	8.6	7.3	15.2	68.9	-0.82	-0.82	-10.44	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	9/6/2018 13:04	16.1	19.0	4.4	60.5	NA	NA	-10.83	NA	NA	Low methane concentration, Pro casing needs repair filled with water
EW-10	9/6/2018 13:08	34.9	30.2	0.1	34.8	-1.45	-1.43	-11.44	10 FO	NA	Manhole cover doesn't close, orifice plate issue.
EW-11	9/6/2018 13:15	0.4	17.5	2.4	80.1	-0.31	-0.32	-10.44	1 No change	NA	Low methane concentration, Manhole cover doesn't close
EW-23	9/6/2018 13:20	1.1	5.2	15.7	78.0	-0.24	-0.24	-9.76	<1 No change	NA	Low methane concentration, high oxygen concentration, low header vacuum
CS-1	9/6/2018 14:35	0.0	0.1	20.1	79.8	NA	NA	-11.24	NA	NA	No methane concentration, high oxygen concentration, Counter:3,523
Blower - Inlet (Initial)	9/6/2018 11:01	18.0	20.0	4.2	57.8	NA	NA	-16.26	NA	+360	
Blower - Outlet (Initial)	9/6/2018 11:05	17.9	19.8	4.3	58.0	NA	NA	+10.62	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH4 quality >50%

Gas wells with low CH4 quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 09/06/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled soon

Leachate loadout area flooded

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 9/6/2018 11:00 AM
 Temp (°F): 64°F Current Conditions/Rel. Humidity: Partly Sunny / 73%
 Barometric Pressure (in. Hg): 29.40 Trend: F S G (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 9/6/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check - Start Time: 11:00 Field Check - End Time: 12:25

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	9/6/2018 11:10	29.9	25.6	0.2	44.3	-1.32	-1.31	-12.33	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	9/6/2018 11:13	12.9	23.3	1.2	62.6	-2.50	-2.49	-4.20	No change	5 NA	Low methane concentration, Low header vacuum, No protective cover
EW-2	9/6/2018 11:16	13.1	22.8	0.5	63.6	-2.18	-2.16	-2.50	10 FO	NA	Low methane concentration, Low header vacuum, No protective cover
HMP-8	9/6/2018 11:20	17.2	21.3	3.2	58.3	NA	NA	-12.92	NA	NA	
EW-1	9/6/2018 11:31	21.5	26.3	0.1	52.1	-1.78	-1.79	-13.85	10 FO	NA	Orifice plate issue, Mice in manhole
EW-22	9/6/2018 11:35	3.1	15.8	6.1	75.0	-3.83	-3.97	-10.55	3 No change	NA	Low methane concentration, High oxygen concentration, No valve adjustment to assist with gas probe MP-02 methane issue, Mice in manhole
EW-21	9/6/2018 11:42	8.5	14.9	7.5	69.1	-3.55	-3.80	-10.37	5 No change	NA	Low methane concentration, High oxygen concentration, No valve adjustment to assist with gas probe MP-02 methane issue, Mice in manhole
G-1	9/6/2018 11:48	16.5	10.9	12.8	59.8	-2.09	-2.04	-10.83	10 FO	NA	High oxygen concentration, orifice plate issue, Manhole cover doesn't close
HMP-7	9/6/2018 11:59	17.0	23.8	0.3	58.9	NA	NA	-10.06	NA	NA	
EW-20	9/6/2018 12:08	17.2	26.1	0.4	56.3	-5.22	-5.16	-9.55	10 FO	NA	Low methane concentration, Manhole removed, Orifice plate issue, Low header vacuum
EW-19	9/6/2018 12:11	16.8	23.6	0.1	59.5	-6.09	-6.06	-9.58	6 No change	NA	Manhole removed, Low header vacuum
G-2	9/6/2018 12:16	24.3	17.2	8.2	50.3	-2.02	-2.04	-9.56	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue, Low header vacuum
EW-18	9/6/2018 12:21	29.5	27.8	0.1	42.6	-2.33	-2.32	-9.53	10 FO	NA	Manhole removed, Orifice plate issue, Low header vacuum
HMP-6	9/6/2018 12:25	22.0	22.8	2.8	52.4	NA	NA	-8.75	NA	NA	Low header vacuum
CS-3	9/6/2018 12:02	0.0	0.0	19.9	80.1	NA	NA	-9.75	NA	NA	No methane concentration, high oxygen concentration Counter:815
Blower - Inlet (Initial)	9/6/2018 11:01	18.0	20.0	4.2	57.8	NA	NA	-16.26	NA	+360	
Blower - Outlet (Initial)	9/6/2018 11:05	17.9	19.8	4.3	58.0	NA	NA	+10.62	NA	+360	

COMMENTS:

- Gas wells with positive pressure
 - Gas wells with low header pressure <10.0"
 - Gas wells with high CH₄ quality >50%
 - Gas wells with low CH₄ quality <20%
- FO = Valve full open
- Gas Collection System was running upon my arrival on 09/06/18
- Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
- Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
- Grass height around 3-4', mowing should be scheduled soon
- Leachate loadout area flooded

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 10/12/2018 1:30 PM
 Temp (°F): 39°F Current Conditions/Rel. Humidity: Cloudy / 65%
 Barometric Pressure (in. Hg): 28.90 Trend: ↻ R (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 10/12/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 13:30 Field Check – End Time: 14:35

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
HMP-3	10/12/2018 13:34	14.0	17.9	5.7	62.4	NA	NA	-9.35	NA	NA	Low methane concentration, High oxygen concentration due to MP-9Y methane issue and response, mice
EW-4	10/12/2018 13:37	18.1	22.3	0.0	59.6	-1.92	-1.93	-9.22	5 No change	NA	
EW-24	10/12/2018 13:41	5.7	17.3	2.5	74.5	-0.43	-0.42	-8.76	<1 No change	NA	Low methane concentration, manhole cover doesn't close
EW-25	10/12/2018 13:46	8.1	20.2	0.9	70.8	-0.85	-0.84	-8.89	<1 No change	NA	Low methane concentration, manhole cover doesn't close
EW-12	10/12/2018 13:50	16.0	21.1	0.1	62.8	-1.67	-1.66	-9.20	<1 No change	NA	Low methane concentration
EW-13	10/12/2018 13:55	0.5	15.0	5.1	79.4	-0.93	-0.92	-8.81	1 No change	NA	Low methane concentration, High oxygen concentration, manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
HMP-4	10/12/2018 13:58	15.5	17.6	6.7	60.2	NA	NA	-8.45	NA	NA	Low Methane concentration, High oxygen concentration due to MP-9Y methane issue and response
EW-14	10/12/2018 14:02	20.9	17.2	6.6	55.3	-8.41	-8.38	-8.44	10FO	NA	High oxygen concentration, valve fully open to assist with gas probe MP-09 methane issue
G-4	10/12/2018 14:06	2.2	1.7	19.8	76.3	-3.53	-3.55	-8.47	2 No change	NA	Low methane concentration, high oxygen concentration, valve set to assist with gas probe MP-09 methane issue
EW-15	10/12/2018 14:10	5.6	16.9	3.5	74.0	-2.75	-2.76	-8.98	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
G-3	10/12/2018 14:17	21.4	28.5	0.4	49.7	-7.25	-7.67	-8.06	2 No change	NA	Manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
EW-16	10/12/2018 14:21	7.1	6.3	16.4	70.2	-6.22	-6.18	-8.36	10FO	NA	Low methane concentration, high oxygen concentration, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
HMP-5	10/12/2018 14:25	22.2	23.3	3.0	51.5	NA	NA	-8.13	NA	NA	
EW-17	10/12/2018 14:32	32.0	27.4	0.3	40.3	-8.33	-8.18	-7.69	10 FO	NA	Manhole removed, well extended, new probes installed, valve set to assist with gas probe MP-09 methane issue
CS-2		No readings collected, no sampling port installed								Counter:1,944	
Blower - Inlet (Final)	10/12/2018 14:43	17.3	19.8	4.5	58.4	NA	NA	-16.57	NA	+360	
Blower - Outlet (Final)	10/12/2018 14:47	17.1	19.6	4.8	58.5	NA	NA	+11.62	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH₄ quality >50%

Gas wells with low CH₄ quality <20%

Gas Collection System was running upon my arrival on 10/12/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3'-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 10/12/2018 12:30 PM

Temp (°F): 37°F

Current Conditions/Rel. Humidity: Cloudy / 70%

Barometric Pressure (in. Hg): 29.00

Trend: ↘ (circle one)

Condition of Ground Surface/Recent Precipitation:

Dry - None

Monitored By: Scott Freimark (ESC)

Gas Detector Make and Model No.:

GEM 5000

Serial No.:

G501764

Date Meter Last Calibrated:

10/12/2018

Calibration Methane Span Gas:

15%

Calibration Oxygen Span Gas:

4%

Field Check – Start Time:

12:30

Field Check – End Time:

13:30

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	10/12/2018 12:30	32.8	25.9	0.1	41.2	-10.51	-11.04	-10.87	5/10 Increased	NA	Manhole removed, well extended, new probes installed
EW-8	10/12/2018 12:40	26.7	12.1	12.5	48.7	-11.84	-11.88	-13.42	5 No change	NA	Manhole removed, well extended, new probes installed
G-5	10/12/2018 12:53	22.8	20.8	3.7	52.7	-9.1	-9.07	-10.75	5 No change	NA	Manhole removed, well extended, new probes installed
G-6	10/12/2018 12:57	2.4	3.8	18.3	75.5	-0.89	-0.88	-10.30	<1 No change	NA	High oxygen concentration
G-7	10/12/2018 13:02	2.7	2.6	19.6	75.1	-0.44	-0.44	-10.23	<1 No change	NA	Low methane concentration, high oxygen concentration
G-8	10/12/2018 13:05	7.3	6.9	17.0	68.8	-0.84	-0.86	-9.39	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	10/12/2018 13:10	15.1	19.2	5.0	60.7	NA	NA	-10.40	NA	NA	Low methane concentration, Pro casing needs repair filled with water
EW-10	10/12/2018 13:19	24.0	27.2	0.1	48.7	-3.33	-3.36	-6.28	5 No change	NA	Manhole removed, well extended, new probes installed
EW-11	10/12/2018 13:24	0.1	9.0	12.6	78.3	-0.28	-0.28	-9.12	1 No change	NA	Low methane concentration, Manhole cover doesn't close
EW-23	10/12/2018 13:29	0.7	3.9	18.0	77.4	-0.53	-0.53	-9.38	<1 No change	NA	Low methane concentration, high oxygen concentration, low header vacuum
CS-1	10/12/2018 14:37	0.0	0.1	21.4	78.5	NA	NA	-10.62	NA	NA	No methane concentration, high oxygen concentration, Counter:4,934
Blower - Inlet (Initial)	10/12/2018 9:09	17.0	19.9	4.2	58.9	NA	NA	-16.37	NA	+360	
Blower - Outlet (Initial)	10/12/2018 9:14	17.5	19.9	4.2	58.4	NA	NA	+10.81	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH₄ quality >50%Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 10/12/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 10/12/2018 10:55 AM
 Temp (°F): 37°F Current Conditions/Rel. Humidity: Cloudy / 70%
 Barometric Pressure (in. Hg): 29.00 Trend: ↻ (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 10/12/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 10:55 Field Check – End Time: 12:25

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	10/12/2018 10:59	29.2	25.9	0.1	44.8	-1.40	-1.39	-12.27	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	10/12/2018 11:02	12.5	23.3	0.8	63.4	-4.40	-4.40	-6.12	5 No change	NA	Low methane concentration, Low header vacuum, No protective cover
EW-2	10/12/2018 11:05	14.9	23.4	0.5	61.2	-4.40	-4.38	-4.27	10 FO	NA	Low methane concentration, Low header vacuum, No protective cover
HMP-8	10/12/2018 11:08	16.3	21.7	2.9	59.1	NA	NA	-12.30	NA	NA	
EW-1	10/12/2018 11:19	14.6	24.4	0.1	60.9	-4.88	-3.28	-8.95	5 No change	NA	Manhole removed, well extended, new probes installed, Low header vacuum, Mice in manhole
EW-22	10/12/2018 11:26	0.7	13.7	7.5	78.1	-4.08	-4.14	-10.05	3 No change	NA	Low methane concentration, High oxygen concentration, Valve set to assist with gas probe MP-02 methane issue, Mice in manhole
EW-21	10/12/2018 11:31	8.1	15.1	8.4	68.4	-3.67	-4.16	-9.60	5 No change	NA	Low methane concentration, High oxygen concentration, Valve set to assist with gas probe MP-02 methane issue, Mice in manhole
G-1	10/12/2018 11:35	29.4	18.6	9.2	42.8	-2.11	-2.10	-9.33	10 FO	NA	High oxygen concentration, orifice plate issue, Manhole cover doesn't close
HMP-7	10/12/2018 11:41	20.9	24.5	0.2	54.4	NA	NA	-9.40	NA	NA	
EW-20	10/12/2018 11:49	18.7	25.4	0.4	55.5	-6.52	-6.24	-8.38	10 FO	NA	Low methane concentration, Manhole removed, Orifice plate issue, Low header vacuum
EW-19	10/12/2018 11:58	21.2	24.6	0.2	54.0	-6.55	-6.96	-8.22	6 No change	NA	Manhole removed, Low header vacuum
G-2	10/12/2018 12:04	25.5	18.0	9.7	46.8	-2.23	-2.22	-9.02	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue, Low header vacuum
EW-18	10/12/2018 12:18	20.9	26.3	0.0	52.8	-5.75	-5.86	-8.22	5 No change	NA	Manhole removed, Orifice plate removed, new probe installed, Low header vacuum
HMP-6	10/12/2018 12:21	22.1	23.1	3.1	51.7	NA	NA	-8.23	NA	NA	
CS-3	10/12/2018 11:44	0.0	0.1	21.9	78.0	NA	NA	-9.23	NA	NA	No methane concentration, high oxygen concentration Counter:1,031
Blower - Inlet (Initial)	10/12/2018 9:09	17.0	19.9	4.2	58.9	NA	NA	-16.37	NA	+360	
Blower - Outlet (Initial)	10/12/2018 9:14	17.5	19.9	4.2	58.4	NA	NA	+10.81	NA	+360	

COMMENTS:

- Gas wells with positive pressure
- Gas wells with low header pressure <10.0"
- Gas wells with high CH₄ quality >50%
- Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 10/12/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 11/5/2018 1:50 PM
 Temp (°F): 45°F Current Conditions/Rel. Humidity: Cloudy / 71%
 Barometric Pressure (in. Hg): 28.80 Trend: ↻ R (circle one)
 Condition of Ground Surface/Recent Precipitation: Damp - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 11/5/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 13:50 Field Check – End Time: 15:05

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
HMP-3	11/5/2018 14:54	14.2	18.2	5.6	62.0	NA	NA	-8.88	NA	NA	Low methane concentration, High oxygen concentration due to MP-9Y methane issue and response, mice
EW-4	11/5/2018 14:57	18.5	21.8	0.3	59.4	-1.84	-1.85	-8.80	5 No change	NA	
EW-24	11/5/2018 15:01	6.1	17.6	2.6	73.7	-0.38	-0.36	-8.16	<1 No change	NA	Low methane concentration, manhole cover doesn't close
EW-25	11/5/2018 15:06	7.9	13.7	7.5	70.9	-0.85	-0.83	-8.05	<1 No change	NA	Low methane concentration, high oxygen concentration, manhole cover doesn't close
EW-12	11/5/2018 15:11	15.1	15.6	5.7	63.6	-1.7	-1.70	-8.90	<1 No change	NA	Low methane concentration, high oxygen concentration
EW-13	11/5/2018 15:15	2.7	16.3	1.4	79.6	-0.79	-0.78	-8.80	1 No change	NA	Low methane concentration, manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
HMP-4	11/5/2018 15:18	15.1	17.4	6.7	60.8	NA	NA	-8.56	NA	NA	Low Methane concentration, High oxygen concentration due to MP-9Y methane issue and response
EW-14	11/5/2018 15:23	19.4	17.0	6.9	56.7	-7.16	-7.16	-8.15	10FO	NA	Low methane concentration, High oxygen concentration, valve fully open to assist with gas probe MP-09 methane issue
G-4	11/5/2018 15:28	4.5	2.5	19.7	73.3	-2.1	-2.10	-7.79	2 No change	NA	Low methane concentration, high oxygen concentration, valve set to assist with gas probe MP-09 methane issue
EW-15	11/5/2018 15:32	4.2	15.1	4.6	76.1	-2.5	-2.50	-8.48	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
G-3	11/5/2018 15:51	20.7	26.1	2.3	50.9	-7.05	-7.02	-8.00	2 No change	NA	Manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
EW-16	11/5/2018 15:55	9.5	8.8	15.3	66.4	-5.74	-5.73	-8.19	10FO	NA	Low methane concentration, high oxygen concentration, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
HMP-5	11/5/2018 15:58	23.1	23.1	3.0	50.8	NA	NA	-8.57	NA	NA	
EW-17	11/5/2018 16:01	29.0	28.0	0.4	42.6	-7.23	-7.55	-7.51	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to assist with gas probe MP-09 methane issue
CS-2		No readings collected, no sampling port installed								Counter:2,345	
Blower - Inlet (Final)	11/5/2018 16:23	19.1	20.8	3.9	56.2	NA	NA	-16.56	NA	+360	
Blower - Outlet (Final)	11/5/2018 16:29	18.9	20.7	4.1	56.3	NA	NA	+11.43	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH₄ quality >50%

Gas wells with low CH₄ quality <20%

Gas Collection System was running upon my arrival on 11/05/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 11/5/2018 1:00 PM
 Temp (°F): 45°F Current Conditions/Rel. Humidity: Cloudy / 71%
 Barometric Pressure (in. Hg): 28.80 Trend: ER (circle one)
 Condition of Ground Surface/Recent Precipitation: Damp - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 11/5/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 13:00 Field Check – End Time: 15:20

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	11/5/2018 14:05	38.6	24.8	1.6	35.0	-10.12	-11.82	-11.73	10 No Change	NA	Manhole was removed, well extended, and new probes installed in Sept.
EW-8	11/5/2018 14:11	8.9	4.3	17.4	69.4	-11.62	-10.62	-11.89	5/2 Decreased	NA	Manhole was removed, well extended, and new probes installed in Sept., Low methane concentration, high oxygen concentration
G-5	11/5/2018 14:15	20.8	19.8	4.3	55.1	-8.23	-8.23	-10.21	5 No change	NA	Manhole was removed, well extended, and new probes installed in Sept.
G-6	11/5/2018 14:19	11.1	9.7	13.5	65.7	-0.68	-0.68	-10.45	<1 No change	NA	Low methane concentration, high oxygen concentration
G-7	11/5/2018 14:24	5.5	3.9	17.2	73.4	-0.36	-0.36	-10.22	<1 No change	NA	Low methane concentration, high oxygen concentration
G-8	11/5/2018 14:30	9.8	8.2	15.3	66.7	-0.84	-0.84	-10.03	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	11/5/2018 14:33	15.9	18.6	4.9	60.6	NA	NA	-10.05	NA	NA	Pro casing needs repair filled with water
EW-10	11/5/2018 14:37	24.5	26.1	0.7	48.7	-3.18	-3.80	-6.35	5/6 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum
EW-11	11/5/2018 14:41	1.6	15.1	2.9	80.4	-0.23	-0.25	-8.91	1 No change	NA	Low methane concentration, Manhole cover doesn't close, low header vacuum
EW-23	11/5/2018 14:45	1.8	7.5	13.2	77.5	-0.47	-0.47	-8.24	<1 No change	NA	Low methane concentration, high oxygen concentration, low header vacuum
CS-1	11/5/2018 16:17	0.0	0.1	21.9	78.0	NA	NA	-10.10	NA	NA	No methane concentration, high oxygen concentration, Counter:5,552
Blower - Inlet (Initial)	11/5/2018 10:21	19.0	20.6	3.4	57.0	NA	NA	-15.83	NA	+360	
Blower - Outlet (Initial)	11/5/2018 10:24	18.8	20.4	3.7	57.1	NA	NA	+10.73	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH4 quality >50%

Gas wells with low CH4 quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 11/05/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 11/5/2018 11:45 AM
 Temp (°F): 45°F Current Conditions/Rel. Humidity: Cloudy / 71%
 Barometric Pressure (in. Hg): 28.80 Trend: ☺ R (circle one)
 Condition of Ground Surface/Recent Precipitation: Damp - None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 11/5/2018
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 11:45 Field Check – End Time: 12:55

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	11/5/2018 12:50	31.0	25.8	0.2	43.0	-1.20	-1.20	-12.43	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	11/5/2018 12:56	18.1	23.5	0.7	57.7	-3.30	-1.14	-5.89	5/3 Decreased	NA	Low methane concentration, Low header vacuum, No protective cover. Well adjusted to assist with methane issue at MP-4Y
EW-2	11/5/2018 13:00	17.3	22.6	1.8	58.3	-3.53	-4.25	-4.25	10 FO	NA	Low methane concentration, Low header vacuum, No protective cover. Well adjusted to assist with methane issue at MP-4Y
HMP-8	11/5/2018 13:03	27.8	24.0	2.1	46.1	NA	NA	-12.26	NA	NA	
EW-1	11/5/2018 13:07	20.4	25.5	0.1	54.0	-2.48	-3.15	-10.46	5/6 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept. Well adjusted to assist with methane issue at MP-4Y, Mice in manhole
EW-22	11/5/2018 13:11	4.0	16.4	1.2	78.4	-4.42	-4.44	-10.28	3 No change	NA	Low methane concentration, Valve set to assist with gas probe MP-02 methane issue, Mice in manhole
EW-21	11/5/2018 13:17	14.0	18.6	5.3	62.1	-4.00	-3.95	-10.30	5 No change	NA	Low methane concentration, High oxygen concentration, Valve set to assist with gas probe MP-02 methane issue, Mice in manhole
G-1	11/5/2018 13:21	22.2	14.8	12.2	50.8	-1.96	-1.98	-10.05	10 FO	NA	High oxygen concentration, orifice plate issue, Manhole cover doesn't close
HMP-7	11/5/2018 16:07	23.9	24.5	0.5	51.1	NA	NA	-8.83	NA	NA	
EW-20	11/5/2018 13:40	19.9	25.4	0.8	53.9	-6.02	-6.00	-7.47	10 FO	NA	Low methane concentration, Manhole removed, Orifice plate issue, Low header vacuum
EW-19	11/5/2018 13:45	23.4	24.6	0.6	51.4	-5.25	-6.06	-7.85	6 No change	NA	Manhole removed, Low header vacuum
G-2	11/5/2018 13:50	27.8	19.4	8.3	44.5	-1.56	-1.55	-7.85	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue, Low header vacuum
EW-18	11/5/2018 13:54	22.3	26.5	0.1	51.1	-5.29	-5.30	-7.89	5 No change	NA	Manhole was removed, well extended, and new probes installed in Sept. Low header vacuum
HMP-6	11/5/2018 14:00	18.5	18.8	6.5	56.2	NA	NA	-7.81	NA	NA	
CS-3	11/5/2018 13:34	0.0	0.1	21.5	78.4	NA	NA	-8.14	NA	NA	No methane concentration, high oxygen concentration Counter:1,031
Blower - Inlet (Initial)	11/5/2018 10:21	19.0	20.6	3.4	57.0	NA	NA	-15.83	NA	+360	
Blower - Outlet (Initial)	11/5/2018 10:24	18.8	20.4	3.7	57.1	NA	NA	+10.73	NA	+360	

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH ₄ quality >50%
Gas wells with low CH ₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 11/05/18
 Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
 Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
 Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 12/3/2018 1:25 PM

Temp (°F): 27°F

Current Conditions/Rel. Humidity: Cloudy / 80%

Barometric Pressure (in. Hg): 29.10

Trend: F S (circle one)

Condition of Ground Surface/Recent Precipitation:

Snow covered - Flurries

Monitored By: Scott Freimark (ESC)

Gas Detector Make and Model No.:

GEM 5000

Serial No.:

G501764

Date Meter Last Calibrated:

12/3/2018

Calibration Methane Span Gas:

50%

Calibration Oxygen Span Gas:

4%

Field Check - Start Time:

13:25

Field Check - End Time:

14:05

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	12/3/2018 13:26	37.4	26.5	1.3	34.8	-11.93	-10.93	-11.46	10 No Change	NA	Manhole was removed, well extended, and new probes installed in Sept.
EW-8	12/3/2018 13:33	6.8	4.2	18.0	71.0	-12.14	-13.02	-12.14	2 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low methane concentration, high oxygen concentration
	12/6/2018 14:05	6.9	4.4	17.8	70.9	-12.00	-4.35	-12.25	2/<1 Decreased	NA	Manhole was removed, well extended, and new probes installed in Sept., Low methane concentration, high oxygen concentration, Decreased vacuum due to high oxygen concentration
G-5	12/3/2018 13:37	19.3	20.1	5.0	55.6	-9.88	-9.35	-10.48	5 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low methane concentration, high oxygen concentration
G-6	12/3/2018 13:42	7.0	6.9	18.2	67.9	-0.93	-0.92	-11.52	<1 No change	NA	Low methane concentration, high oxygen concentration
G-7	12/3/2018 13:46	4.0	3.5	18.6	73.9	-0.57	-0.58	-10.37	<1 No change	NA	Low methane concentration, high oxygen concentration
G-8	12/3/2018 13:50	3.7	4.7	20.8	70.8	-1.03	-1.02	-10.13	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	12/3/2018 13:53	14.4	19.4	5.9	60.3	NA	NA	-10.38	NA	NA	Pro casing needs repair Filled with water, Low methane concentration, High oxygen concentration due to MP-9Y methane issue and response
EW-10	12/3/2018 13:57	22.9	27.1	0.1	49.9	-4.00	-3.98	-5.65	6 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum
EW-11	12/3/2018 14:01	1.0	10.8	12.8	75.4	-0.33	-0.33	-10.30	1 No change	NA	Low methane concentration, high oxygen concentration, Manhole cover doesn't close
EW-23	12/3/2018 14:05	1.1	5.2	19.6	74.1	-0.73	-0.72	-9.33	<1 No change	NA	Low methane concentration, high oxygen concentration, low header vacuum
CS-1	12/3/2018 15:10	0.0	0.3	23.4	76.3	NA	NA	-11.75	NA	NA	No methane concentration, high oxygen concentration, pneumatic pump in sump, Counter:10,012
Blower - Inlet (Initial)	12/6/2018 13:46	15.6	19.3	4.8	60.3	NA	NA	-17.48	NA	+360	
Blower - Outlet (Initial)	12/6/2018 13:52	15.4	19.0	5.0	60.6	NA	NA	+10.29	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH₄ quality >50%Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 12/03/18

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 12/3/2018 2:05 PM
 Temp (°F): 27°F Current Conditions/Rel. Humidity: Cloudy / 80%
 Barometric Pressure (in. Hg): 29.10 Trend: ↻ R (circle one)
 Condition of Ground Surface/Recent Precipitation: Snow covered - Flurries
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 12/3/2018
 Calibration Methane Span Gas: 50% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 14:05 Field Check – End Time: 15:25

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
HMP-3	12/3/2018 14:08	13.3	18.0	6.7	62.0	NA	NA	-9.87	NA	NA	Low methane concentration, High oxygen concentration due to MP-9Y methane issue and response, mice
EW-4	12/3/2018 14:11	16.8	22.4	0.1	60.7	-2.39	-2.40	-9.45	5 No change	NA	Low methane concentration, low header vacuum
EW-24	12/3/2018 14:16	3.4	16.5	5.8	74.3	-0.50	-0.50	-7.91	<1 No change	NA	Low methane concentration, High oxygen concentration, low header vacuum, manhole cover doesn't close
EW-25	12/3/2018 14:21	8.9	20.6	0.7	69.8	-1.13	-1.14	-9.58	<1 No change	NA	Low methane concentration, low header vacuum, manhole cover doesn't close
EW-12	12/3/2018 14:25	16.8	20.5	0.2	62.5	-2.19	-2.18	-9.14	<1 No change	NA	Low methane concentration, low header vacuum
EW-13	12/3/2018 14:28	1.2	17.5	2.1	79.2	-0.94	-0.96	-9.03	1 No change	NA	Low methane concentration, manhole cover doesn't close, low header vacuum, valve set to assist with gas probe MP-09 methane issue
HMP-4	12/3/2018 14:32	14.4	17.5	8.5	59.6	NA	NA	-9.45	NA	NA	Low Methane concentration, High oxygen concentration due to MP-9Y methane issue and response
EW-14	12/3/2018 14:36	27.0	20.2	5.5	47.3	-8.78	-8.75	-9.69	10FO	NA	High oxygen concentration, low header vacuum, valve fully open to assist with gas probe MP-09 methane issue
G-4	12/3/2018 14:43	0.7	1.0	23.1	75.2	-3.70	-3.69	-9.50	2 No change	NA	Low methane concentration, high oxygen concentration, low header vacuum, valve set to assist with gas probe MP-09 methane issue
	12/6/2018 14:25	0.8	0.8	22.5	75.9	-3.25	-1.70	-9.35	2/1 Decreased	NA	Low methane concentration, high oxygen concentration, low header vacuum, Decreased vacuum due to high oxygen concentration
EW-15	12/3/2018 14:47	5.8	18.0	4.1	72.1	-3.12	-3.13	-10.53	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
G-3	12/3/2018 14:51	19.4	28.8	1.3	50.5	-7.85	-7.71	-9.48	2 No change	NA	Low methane concentration, Manhole cover doesn't close, low header vacuum, valve set to assist with gas probe MP-09 methane issue
EW-16	12/3/2018 14:56	5.3	5.8	19.3	69.6	-4.92	-4.88	-9.50	10FO	NA	Low methane concentration, high oxygen concentration, low header vacuum, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
HMP-5	12/3/2018 14:59	21.7	23.9	3.6	50.8	NA	NA	-9.22	NA	NA	
EW-17	12/3/2018 15:02	25.3	26.4	1.9	46.4	-9.17	-9.06	-9.43	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., low header vacuum, valve set to assist with gas probe MP-09 methane issue
CS-2		No readings collected, no sampling port installed								Counter: 2,915	
Blower - Inlet (Final)	12/3/2018 15:17	16.4	20.2	5.2	58.2	NA	NA	-18.38	NA	+360	
Blower - Outlet (Final)	12/3/2018 15:21	16.3	20.0	5.6	58.1	NA	NA	+11.85	NA	+360	

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH ₄ quality >50%
Gas wells with low CH ₄ quality <20%

Gas Collection System was running upon my arrival on 12/03/18
 Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
 Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
 Grass height around 3'-4", mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 12/3/2018 12:25 PM
 Temp (°F): 27°F Current Conditions/Rel. Humidity: Cloudy / 80%
 Barometric Pressure (in. Hg): 29.10 Trend: FC (circle one)
 Condition of Ground Surface/Recent Precipitation: Snow covered - Flurries
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 12/3/2018
 Calibration Methane Span Gas: 50% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 12:25 Field Check – End Time: 13:25

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	12/3/2018 12:25	29.0	26.7	0.0	44.3	-1.42	-1.41	-13.29	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	12/3/2018 12:29	18.7	24.5	0.4	56.4	-1.05	-1.04	-6.97	3 No change	NA	Low methane concentration, Low header vacuum, No protective cover, Well adjusted to assist with methane issue at MP-4Y
EW-2	12/3/2018 12:31	16.1	24.2	0.2	59.5	-3.72	-3.70	-3.79	10 FO	NA	Low methane concentration, Low header vacuum, No protective cover, Well adjusted to assist with methane issue at MP-4Y
HMP-8	12/3/2018 12:34	19.2	22.8	3.0	55.0	NA	NA	-11.85	NA	NA	
EW-1	12/3/2018 12:38	18.6	25.5	0.2	55.7	-3.96	-3.99	-10.21	6 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Well adjusted to assist with methane issue at MP-4Y, Low methane concentration, Mice in manhole
EW-22	12/3/2018 12:44	2.4	16.2	5.1	76.3	-4.01	-3.16	-10.00	3 No change	NA	Low methane concentration, High oxygen concentration, Valve set to assist with gas probe MP-O2 methane issue, Mice in manhole
EW-21	12/3/2018 12:49	13.6	20.9	3.5	62.0	-3.85	-2.98	-8.90	5 No change	NA	Low methane concentration, Valve set to assist with gas probe MP-O2 methane issue, Low header vacuum, Mice in manhole
G-1	12/3/2018 12:53	24.1	16.4	12.2	47.3	-2.00	-1.99	-8.08	10 FO	NA	High oxygen concentration, orifice plate issue, Low header vacuum, Manhole cover doesn't close
HMP-7	12/3/2018 12:58	24.2	25.9	0.5	49.4	NA	NA	-9.05	NA	NA	Low methane concentration, Manhole removed, Orifice plate issue, Low header vacuum
EW-20	12/3/2018 13:06	18.2	25.5	0.2	56.1	-5.07	-4.83	-8.21	10 FO	NA	
EW-19	12/3/2018 13:10	24.1	26.0	0.2	49.7	-5.42	-6.42	-7.15	6 No change	NA	Manhole removed, Low header vacuum
G-2	12/3/2018 13:14	24.3	17.1	11.4	47.2	-1.60	-1.63	-7.74	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue, Low header vacuum
EW-18	12/3/2018 13:18	20.7	27.2	0.1	52.0	-4.87	-5.05	-7.09	5 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum
HMP-6	12/3/2018 13:22	21.0	23.3	4.1	51.6	NA	NA	-9.82	NA	NA	
CS-3	12/3/2018 13:00	0.0	0.1	23.9	76.0	NA	NA	-8.91	NA	NA	No methane concentration, high oxygen concentration, pneumatic pump in sump, Counter:1,031
Blower - Inlet (Initial)	12/3/2018 12:13	16.7	19.7	5.5	58.1	NA	NA	-18.25	NA	+360	
Blower - Outlet (Initial)	12/3/2018 12:17	16.8	19.8	5.5	57.9	NA	NA	+11.98	NA	+360	

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH ₄ quality >50%
Gas wells with low CH ₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 12/03/18
Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
Grass height around 3-4', mowing should be scheduled soon

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 1/8/2019 1:10 PM
 Temp (°F): 36^oF Current Conditions/Rel. Humidity: Partly Cloudy / 90%
 Barometric Pressure (in. Hg): 28.60 Trend: F S (circle one)
 Condition of Ground Surface/Recent Precipitation: Damp - rain earlier in the morning
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 1/8/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 13:10 Field Check – End Time: 14:15

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	1/8/2019 13:15	37.0	25.5	0.0	37.5	-10.80	-11.10	-11.07	10 No Change	NA	Manhole was removed, well extended, and new probes installed in Sept.
EW-8	1/8/2019 15:08	40.2	15.9	9.0	34.9	-0.44	-2.55	-13.40	1/2 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept., high oxygen concentration
G-5	1/8/2019 13:31	20.3	18.5	4.0	57.2	-9.33	-9.34	-10.83	5 No change	NA	Manhole was removed, well extended, and new probes installed in Sept.
G-6	1/8/2019 13:34	8.9	6.7	16.7	67.7	-1.12	-1.12	-11.77	<1 No change	NA	Low methane concentration, high oxygen concentration
G-7	1/8/2019 13:42	0.0	0.2	22.2	77.6	-0.55	-0.55	-10.51	<1 No change	NA	Low methane concentration, high oxygen concentration
G-8	1/8/2019 13:46	4.5	4.0	19.5	72.0	-1.03	-1.02	11.26	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	1/8/2019 13:49	15.0	17.6	6.0	61.4	NA	NA	-11.25	NA	NA	Pro casing needs repair Filled with water
EW-10	1/8/2019 13:55	23.5	25.6	0.2	50.7	-4.48	-5.56	-6.35	6/7 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum
EW-11	1/8/2019 14:00	0.2	8.3	14.2	77.3	-0.35	-0.36	-11.36	1 No change	NA	Low methane concentration, high oxygen concentration, Manhole cover doesn't close
EW-23	1/8/2019 14:04	1.4	4.0	19.5	75.1	-0.81	-0.80	-10.32	<1 No change	NA	Low methane concentration, high oxygen concentration, low header vacuum
CS-1	1/8/2019 15:10	0.0	0.1	22.7	77.2	NA	NA	-12.48	NA	NA	No methane concentration, high oxygen concentration, pneumatic pump in sump, Counter:
Blower - Inlet (Initial)	1/8/2019 11:49	18.5	19.4	4.7	57.4	NA	NA	-16.90	NA	+360	
Blower - Outlet (Initial)	1/8/2019 11:52	18.1	18.9	4.9	58.1	NA	NA	+10.47	NA	+360	

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH ₄ quality >50%
Gas wells with low CH ₄ quality <20%
FO = Valve full open
Gas Collection System was running upon my arrival on 1/8/19
Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
Grass height around 3-4', mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 1/8/2019 2:05 PM
 Temp (°F): 36°F Current Conditions/Rel. Humidity: Partly Cloudy / 90%
 Barometric Pressure (in. Hg): 28.60 Trend: (↻) (circle one)
 Condition of Ground Surface/Recent Precipitation: Damp - rain earlier in the morning
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 1/8/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check - Start Time: 14:05 Field Check - End Time: 15:20

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
HMP-3	1/8/2019 14:09	13.6	16.0	7.1	63.3	NA	NA	-10.68	NA	NA	Low methane concentration, High oxygen concentration due to MP-9Y methane issue and response, mice
EW-4	1/8/2019 14:12	18.8	21.4	0.2	59.6	-2.91	-2.89	-10.41	5 No change	NA	Low methane concentration
EW-24	1/8/2019 14:16	4.7	15.6	5.9	73.8	-0.50	-0.50	-10.45	<1 No change	NA	Low methane concentration, High oxygen concentration, manhole cover doesn't close
EW-25	1/8/2019 14:20	7.9	19.2	1.5	71.4	-1.41	-1.37	-10.26	<1 No change	NA	Low methane concentration, manhole cover doesn't close
EW-12	1/8/2019 14:24	16.1	19.0	0.3	64.6	-2.40	-2.41	-10.95	<1 No change	NA	Low methane concentration,
EW-13	1/8/2019 14:28	0.8	14.8	5.8	78.6	-1.14	-1.14	-10.35	1 No change	NA	Low methane concentration, manhole cover doesn't close, high oxygen concentration, valve set to assist with gas probe MP-09 methane issue
HMP-4	1/8/2019 14:30	15.1	15.4	9.1	60.4	NA	NA	-10.88	NA	NA	Low Methane concentration, High oxygen concentration due to MP-9Y methane issue and response
EW-14	1/8/2019 14:35	36.2	23.6	0.9	39.3	-9.62	-10.34	-10.95	10FO	NA	Valve fully open to assist with gas probe MP-09 methane issue
G-4	1/8/2019 14:40	1.8	1.0	21.9	75.3	-3.97	-1.74	-10.26	1/<1 Decreased	NA	Low methane concentration, high oxygen concentration, valve set to assist with gas probe MP-09 methane issue
EW-15	1/8/2019 14:43	6.7	17.0	4.0	72.3	-3.75	-3.75	-11.05	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
G-3	1/8/2019 14:47	27.7	27.8	0.5	44.0	-9.48	-9.15	-10.32	2 No change	NA	Manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
EW-16	1/8/2019 14:57	4.1	4.0	19.8	72.1	-6.44	-2.20	-11.10	10/2 Decreased	NA	Low methane concentration, high oxygen concentration, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
HMP-5	1/8/2019 14:59	25.4	22.3	4.2	48.1	NA	NA	-10.75	NA	NA	
EW-17	1/8/2019 15:03	30.6	23.2	2.2	44.0	-10.28	-11.3	-10.31	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to assist with gas probe MP-09 methane issue
CS-2		No readings collected, no sampling port installed								Counter: 3,355	
Blower - Inlet (Final)	1/8/2019 15:14	17.7	19.3	4.7	58.3	NA	NA	-17.36	NA	+360	
Blower - Outlet (Final)	1/8/2019 15:17	17.6	19.1	5.0	58.3	NA	NA	+10.47	NA	+360	

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH ₄ quality >50%
Gas wells with low CH ₄ quality <20%
Gas Collection System was running upon my arrival on 1/8/19
Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
Grass height around 3-4', mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 1/8/2019 11:55 AM
 Temp (°F): 36°F Current Conditions/Rel. Humidity: Partly Cloudy / 90%
 Barometric Pressure (in. Hg): 28.60 Trend: (circle one)
 Condition of Ground Surface/Recent Precipitation: Damp - rain earlier in the morning
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 1/8/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 11:55 Field Check – End Time: 13:10

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	1/8/2019 11:57	29.4	25.2	0.1	45.3	-1.48	-1.45	-13.70	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	1/8/2019 12:02	19.6	24.7	0.6	55.1	-1.57	-1.53	-7.36	3 No change	NA	Low methane concentration, Low header vacuum, No protective cover, Well adjusted to assist with methane issue at MP-4Y
EW-2	1/8/2019 12:05	16.2	23.6	0.2	60.0	-4.42	-4.38	-4.26	10 FO	NA	Low methane concentration, Low header vacuum, No protective cover, Well adjusted to assist with methane issue at MP-4Y
HMP-8	1/8/2019 12:07	20.0	22.2	2.5	55.3	NA	NA	-13.27	NA	NA	
EW-1	1/8/2019 12:11	18.5	24.4	0.2	56.9	-4.19	-4.15	-10.92	6 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Well adjusted to assist with methane issue at MP-4Y, Low methane concentration, Mice in manhole
EW-22	1/8/2019 12:16	2.4	15.4	4.8	77.4	-2.52	-2.48	-8.77	3 No change	NA	Low methane concentration, Valve set to assist with gas probe MP-02 methane issue, low header vacuum, Mice in manhole
EW-21	1/8/2019 12:26	17.8	23.2	0.7	58.3	-2.27	-2.20	-8.35	5 No change	NA	Low methane concentration, Valve set to assist with gas probe MP-02 methane issue, Low header vacuum, Mice in manhole
G-1	1/8/2019 12:30	27.7	16.3	10.7	45.3	-1.21	-1.22	-7.84	10 FO	NA	High oxygen concentration, orifice plate issue, Low header vacuum, Manhole cover doesn't close
HMP-7	1/8/2019 12:35	25.8	25.5	0.4	48.3	NA	NA	-8.06	NA	NA	
EW-20	1/8/2019 12:49	21.4	25.0	0.2	53.4	-3.34	-3.95	-7.27	10 FO	NA	Manhole removed, Orifice plate issue, Low header vacuum
EW-19	1/8/2019 12:53	26.9	25.8	0.2	47.1	-4.77	-5.01	-6.77	6 No change	NA	Manhole removed, Low header vacuum
G-2	1/8/2019 12:57	26.1	15.3	11.4	47.2	-1.08	-1.10	-14.62	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue
EW-18	1/8/2019 13:02	26.8	26.8	0.1	46.3	-4.39	-5.62	-6.87	5/7 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum
HMP-6	1/8/2019 13:11	18.4	19.6	4.8	57.2	NA	NA	-8.10	NA	NA	
CS-3	1/8/2019 12:38	0.0	0.1	22.3	77.6	NA	NA	-7.43	NA	NA	No methane concentration, high oxygen concentration, pneumatic pump in sump, Counter:1,031
Blower - Inlet (Initial)	1/8/2019 11:49	18.5	19.4	4.7	57.4	NA	NA	-16.90	NA	+360	
Blower - Outlet (Initial)	1/8/2019 11:52	18.1	18.9	4.9	58.1	NA	NA	+10.47	NA	+360	

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH ₄ quality >50%
Gas wells with low CH ₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 1/8/19
Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
Grass height around 3-4", mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 2/5/2019 12:45 PMTemp (°F): 23^oFCurrent Conditions/Rel. Humidity: Cloudy / 74%Barometric Pressure (in. Hg): 29.20Trend: F (circle one)

Condition of Ground Surface/Recent Precipitation:

Snow patches -noneMonitored By: Scott Freimark (ESC)

Gas Detector Make and Model No.:

GEM 5000

Serial No.:

G501764

Date Meter Last Calibrated:

2/5/2019

Calibration Methane Span Gas:

15%

Calibration Oxygen Span Gas:

4%

Field Check – Start Time:

12:45

Field Check – End Time:

14:45

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	2/5/2019 12:48	34.5	24.2	0.1	41.2	-13.31	-12.55	-13.99	10 No Change	NA	Manhole was removed, well extended, and new probes installed in Sept.
EW-8	2/5/2019 14:48	35.5	13.9	10.6	40.0	-12.56	-13.12	-14.12	1/2 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept., high oxygen concentration
G-5	2/5/2019 12:58	18.2	17.6	4.0	60.2	-10.64	-11.75	-12.05	5 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., low methane concentration
G-6	2/5/2019 13:03	9.9	8.6	15.3	66.2	-0.9	-0.89	-11.34	<1 No change	NA	Low methane concentration, high oxygen concentration
G-7	2/5/2019 13:08	1.2	1.4	21.5	75.9	-0.19	-0.19	-10.05	<1 No change	NA	Low methane concentration, high oxygen concentration
G-8	2/5/2019 13:13	5.2	5.1	19.3	70.4	-1.05	-1	-11.24	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	2/5/2019 13:17	14.3	19.2	3.8	62.7	NA	NA	-10.93	NA	NA	Pro casing needs repair filled with water
EW-10	2/5/2019 13:22	23.1	24.9	0.2	51.8	-3.99	-3.97	-5.65	6/7 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum
EW-11	2/5/2019 13:27	0.2	8.7	14.5	76.6	-0.33	-0.32	-10.67	1 No change	NA	Low methane concentration, high oxygen concentration, Manhole cover doesn't close
EW-23	2/5/2019 13:31	0.5	4.3	19.5	75.7	-0.92	-0.87	-10.78	<1 No change	NA	Low methane concentration, high oxygen concentration
CS-1	2/5/2019 14:43	0.0	0.2	23.0	76.8	NA	NA	-12.95	NA	NA	No methane concentration, high oxygen concentration, pneumatic pump in sump, Counter:
Blower - Inlet (Initial)	2/5/2019 11:12	19.4	20.0	4.1	56.5	NA	NA	-21.17	NA	+360	
Blower - Outlet (Initial)	2/5/2019 11:15	19.3	19.6	4.5	56.6	NA	NA	+9.24	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH4 quality >50%

Gas wells with low CH4 quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 2/5/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3'-4', mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 2/5/2019 13:35:00 PM
 Temp (°F): 23^oF Current Conditions/Rel. Humidity: Cloudy / 80%
 Barometric Pressure (in. Hg): 29.20 Trend: ↻ (circle one)
 Condition of Ground Surface/Recent Precipitation: Snow patches -none
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 2/5/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 13:35 Field Check – End Time: 14:40

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments	
HMP-3	2/5/2019 13:37	10.7	17.5	3.2	68.6	NA	NA	-11.02	NA	NA	Low methane concentration, valve set to assist with gas probe MP-09 methane issue, mice	
EW-4	2/5/2019 13:40	17.2	20.7	0.1	62.0	-2.17	-2.13	-10.68	5 No change	NA	Low methane concentration	
EW-24	2/5/2019 13:46	3.3	14.8	7.7	74.2	-0.49	-0.49	-11.84	<1 No change	NA	Low methane concentration, High oxygen concentration, manhole cover doesn't close	
EW-25	2/5/2019 13:50	8.0	18.8	1.4	71.8	-1.05	-1.06	-10.53	<1 No change	NA	Low methane concentration, manhole cover doesn't close	
EW-12	2/5/2019 13:55	14.0	18.0	0.4	67.6	-2.14	-2.13	-11.86	<1 No change	NA	Low methane concentration,	
EW-13	2/5/2019 14:00	0.9	16.1	4.4	78.6	-1.04	-1.02	-10.90	1 No change	NA	Low methane concentration, manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue	
HMP-4	2/5/2019 14:03	18.5	15.9	6.7	58.9	NA	NA	-11.06	NA	NA	Low Methane concentration, High oxygen concentration due to MP-9Y methane issue and response	
EW-14	2/5/2019 14:09	33.3	22.7	0.8	43.2	-9.83	-9.01	-10.84	10FO	NA	Valve fully open to assist with gas probe MP-09 methane issue	
G-4	2/5/2019 14:13	4.0	3.9	19.5	72.6	-0.39	-0.35	-2.40	<1 No change	NA	Low methane concentration, high oxygen concentration, valve set to assist with gas probe MP-09 methane issue, low header vacuum due to issue with CS-2	
EW-15	2/5/2019 14:18	18.5	21.0	1.3	59.2	-0.74	-0.69	-2.61	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue, low header vacuum due to issue with CS-2	
G-3	2/5/2019 14:23	24.4	23.7	0.6	51.3	-1.20	-1.72	-2.60	2 No change	NA	Manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue, low header vacuum due to issue with CS-2	
EW-16	2/5/2019 14:29	6.9	7.1	15.6	70.4	-0.56	-0.41	-2.46	2 No change	NA	Low methane concentration, high oxygen concentration, valve adjusted to assist with gas probe MP-09 methane issue, orifice plate issue, low header vacuum due to issue with CS-2	
HMP-5	2/5/2019 14:33	13.3	14.8	7.1	64.8	NA	NA	-1.98	NA	NA		
EW-17	2/5/2019 14:37	36.7	25.3	0.0	38.0	-1.11	-1.10	-1.77	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to assist with gas probe MP-09 methane issue, low header vacuum due to issue with CS-2	
CS-2	No readings collected, no sampling port installed.					Utility box full of water and pump not operating				Counter: 3,398		
Blower - Inlet (Final)	2/5/2019 11:12	19.4	20.0	4.1	56.5	NA	NA	-21.17	NA	+360		
Blower - Outlet (Final)	2/5/2019 11:15	19.3	19.6	4.5	56.6	NA	NA	+9.24	NA	+360		

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH4 quality >50%
Gas wells with low CH4 quality <20%

Gas Collection System was running upon my arrival on 2/5/19
 Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
 Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
 Grass height around 3-4', mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 2/5/2019 11:20 AM
 Temp (°F): 21°F Current Conditions/Rel. Humidity: Cloudy / 80%
 Barometric Pressure (in. Hg): 29.20 Trend: ↻ (circle one)
 Condition of Ground Surface/Recent Precipitation: Snow patches -none
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 2/5/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 11:20 Field Check – End Time: 12:45

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	2/5/2019 11:24	27.7	24.8	0.0	47.5	-1.64	-1.66	-13.65	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	2/5/2019 11:28	14.9	22.6	1.2	61.3	-1.12	-1.11	-10.02	3 No change	NA	Low methane concentration, No protective cover, Well adjusted to assist with methane issue at MP-4Y
EW-2	2/5/2019 11:31	16.8	23.3	0.1	59.8	-3.98	-3.89	-4.25	10 FO	NA	Low methane concentration, Low header vacuum, No protective cover, Well adjusted to assist with methane issue at MP-4Y
HMP-8	2/5/2019 11:49	22.7	22.0	3.5	51.8	NA	NA	-17.02	NA	NA	
EW-1	2/5/2019 11:54	17.8	24.0	0.2	58.0	-4.46	-3.68	-10.37	6 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Well adjusted to assist with methane issue at MP-4Y, Low methane concentration
EW-22	2/5/2019 11:58	1.2	13.9	8.2	76.7	-4.27	-2.43	-7.72	3 No change	NA	Low methane concentration, Valve set to assist with gas probe MP-02 methane issue, low header vacuum, Mice in manhole
EW-21	2/5/2019 12:03	17.4	20.8	2.7	59.1	-3.32	-2.95	-7.41	5 No change	NA	Low methane concentration, Valve set to assist with gas probe MP-02 methane issue, Low header vacuum, Mice in manhole
G-1	2/5/2019 12:08	28.8	17.0	9.7	44.5	-1.17	-1.21	-10.32	10 FO	NA	High oxygen concentration, orifice plate issue, Manhole cover doesn't close
HMP-7	2/5/2019 12:12	29.5	23.6	3.3	43.6	NA	NA	-7.17	NA	NA	
EW-20	2/5/2019 12:22	31.8	25.4	0.6	42.2	-2.91	-2.51	-5.18	10 FO	NA	Manhole removed, Orifice plate issue, Low header vacuum
EW-19	2/5/2019 12:27	34.8	27.9	0.2	37.1	-3.01	-4.43	-5.12	6/8 Increased	NA	Manhole removed, Low header vacuum
G-2	2/5/2019 12:33	31.4	18.0	9.5	41.1	-0.63	-0.65	NA	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue
EW-18	2/5/2019 12:38	30.9	27.1	0.1	41.9	-2.73	-3.73	-4.77	7/10 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum
HMP-6	2/5/2019 12:44	8.8	9.9	12.7	68.6	NA	NA	-5.38	NA	NA	
CS-3	2/5/2019 12:16	0.0	0.1	22.9	77.0	NA	NA	-6.59	NA	NA	No methane concentration, high oxygen concentration, pneumatic pump in sump, Counter:1,031
Blower - Inlet (Final)	2/5/2019 14:52	19.5	20.1	4.0	56.4	NA	NA	-19.96	NA	+360	
Blower - Outlet (Final)	2/5/2019 14:54	19.1	19.6	4.5	56.8	NA	NA	+7.95	NA	+360	

COMMENTS:

- Gas wells with positive pressure
- Gas wells with low header pressure <10.0"
- Gas wells with high CH₄ quality >50%
- Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 02/05/19
 Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
 Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
 Grass height around 3-4', mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 3/8/2019 9:30 AM

Temp (°F): 33⁰F Current Conditions/Rel. Humidity: Cloudy / 66%

Barometric Pressure (in. Hg): 29.40 Trend: f (circle one)

Condition of Ground Surface/Recent Precipitation: Snowcovered -none

Monitored By: Scott Freimark (ESC)

Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764

Date Meter Last Calibrated: 3/8/2019

Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%

Field Check – Start Time: 9:30 Field Check – End Time: 11:20

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	3/8/2019 12:44	30.4	23.6	0.0	46	-10.90	-10.86	-11.06	10 No Change	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to promote gas collection from the center of landfill
EW-8	3/8/2019 12:49	21.5	19.8	5.2	53.5	-11.27	-11.32	-14.78	2 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., high oxygen concentration, valve set to promote gas collection from the center of landfill
G-5	3/8/2019 12:57	15.6	16.8	3.8	63.8	-10.47	-11.04	-11.95	5 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low methane concentration
G-6	3/8/2019 13:05	18.1	12.5	11.5	57.9	-0.78	-0.80	-14.14	<1 No change	NA	Low methane concentration, high oxygen concentration
G-7	3/8/2019 13:11	1.2	1.6	20.8	76.4	-0.22	-0.23	-10.60	<1 No change	NA	Low methane concentration, high oxygen concentration
G-8	3/8/2019 13:18	4.9	4.5	18.8	71.8	-0.80	-0.81	-13.65	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	3/8/2019	No readings collected , area frozen over no access to the utility box									
EW-10	3/8/2019 13:27	20.1	24.3	0.3	55.3	-5.00	-4.99	-7.35	7 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum due to possible lateral issue
EW-11	3/8/2019 13:31	0.1	7.6	14.4	77.9	-0.49	-0.48	-14.23	1 No change	NA	Low methane concentration, high oxygen concentration, Manhole cover doesn't close
EW-23	3/8/2019 13:40	1.0	5.3	16.9	76.8	-1.49	-1.49	-12.64	<1 No change	NA	Low methane concentration, high oxygen concentration
CS-1	3/8/2019	No readings collected , area frozen over no access to the utility box Counter: NA									
Blower - Inlet (Final)	3/8/2019 11:21	20.0	20.2	3.2	56.6	NA	NA	-18.96	NA	+360	
Blower - Outlet (Final)	3/8/2019 11:24	19.4	19.8	3.5	57.3	NA	NA	+11.03	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH4 quality >50%

Gas wells with low CH4 quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 3/8/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled early spring

Snowmobile tracks found on the site during the March monitoring event.

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 3/8/2019 9:30 AM
 Temp (°F): 33⁰F Current Conditions/Rel. Humidity: Cloudy / 66%
 Barometric Pressure (in. Hg): 29.40 Trend: fcs (circle one)
 Condition of Ground Surface/Recent Precipitation: Snowcovered -none
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 3/8/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:30 Field Check – End Time: 11:20

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments	
HMP-3	3/8/2019 13:35	12.6	17.1	3.7	66.6	NA	NA	-13.02	NA	NA	Composite sample	
EW-4	3/8/2019 13:45	13.5	20.1	0.1	66.3	-2.56	-2.56	-12.68	5 No change	NA	Low methane concentration	
EW-24	3/8/2019 13:51	3.4	14.8	6.7	75.1	-0.42	-0.42	-13.72	<1 No change	NA	Low methane concentration, High oxygen concentration, manhole cover doesn't close	
EW-25	3/8/2019 13:56	5.8	17.6	2.6	74.0	-1.12	-1.11	-12.47	<1 No change	NA	Low methane concentration, manhole cover doesn't close	
EW-12	3/8/2019 14:11	10.6	17.4	0.6	71.4	-2.29	-2.30	-12.95	<1 No change	NA	Low methane concentration,	
EW-13	3/8/2019 14:16	0.6	14.2	5.5	79.7	-1.24	-1.22	-13.04	1 No change	NA	Low methane concentration, manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue	
HMP-4	3/8/2019 14:18	23.4	18.7	3.5	54.4	NA	NA	-13.8	NA	NA	Composite sample	
EW-14	3/8/2019 14:24	27.6	20.1	1.8	50.5	-12.67	-11.84	-13.76	10FO	NA	Valve fully open to assist with gas probe MP-09 methane issue	
G-4	3/8/2019 14:29	16.2	10.3	12.7	60.8	-1.43	-1.43	-5.95	<1 No change	NA	Low methane concentration, high oxygen concentration, valve set to assist with gas probe MP-09 methane issue, low header vacuum due to issue with CS-2	
EW-15	3/8/2019 14:33	19.0	20.5	0.9	59.6	-2.42	-2.42	-6.54	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue, low header vacuum due to issue with CS-2	
G-3	3/8/2019 14:41	20.2	16.4	7.9	55.5	-5.51	-6.64	-6.12	2 No change	NA	High oxygen concentration, Manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue, low header vacuum due to issue with CS-2	
EW-16	3/8/2019 14:46	14.7	10.6	12.6	62.1	-5.74	-5.71	-5.90	2 No change	NA	Low methane concentration, high oxygen concentration, valve adjusted to assist with gas probe MP-09 methane issue, orifice plate issue, low header vacuum due to issue with CS-2	
HMP-5	3/8/2019 14:51	30.2	23.6	1.1	45.1	NA	NA	-6.37	NA	NA	Composite sample, low header vacuum due to issue with CS-2	
EW-17	3/8/2019 14:54	35.8	24.6	1.1	38.5	-5.44	-5.46	-6.55	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to assist with gas probe MP-09 methane issue, low header vacuum due to issue with CS-2	
CS-2	3/8/2019	No readings collected, no sampling port installed.					Area frozen over no access to the utility box			Counter: NA		
Blower - Inlet (Final)	3/8/2019 11:21	20.0	20.2	3.2	56.6	NA	NA	-18.96	NA	+360		
Blower - Outlet (Final)	3/8/2019 11:24	19.4	19.8	3.5	57.3	NA	NA	+11.03	NA	+360		

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH₄ quality >50%

Gas wells with low CH₄ quality <20%

Gas Collection System was running upon my arrival on 3/8/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled early spring

Snowmobile tracks found on the site during the March monitoring event.

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 3/8/2019 9:30 AM
 Temp (°F): 33°F Current Conditions/Rel. Humidity: Cloudy / 66%
 Barometric Pressure (in. Hg): 29.40 Trend: f (circle one)
 Condition of Ground Surface/Recent Precipitation: Snowcovered -none
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 3/8/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:30 Field Check – End Time: 11:20

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	3/8/2019 11:32	27.0	24.9	0.0	48.1	-1.21	-1.21	-15.37	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	3/8/2019 11:37	18.9	21.7	1.3	58.1	-0.99	-1.00	-12.64	3 No change	NA	Low methane concentration, No protective cover, Well adjusted to assist with methane issue at MP-4Y
EW-2	3/8/2019 11:41	20.4	23.3	0.0	56.3	-3.48	-3.45	-3.51	10 FO	NA	Low header vacuum, No protective cover, Well adjusted to assist with methane issue at MP-4Y
HMP-8	3/8/2019 11:44	24.4	23.0	2.2	50.4	NA	NA	-14.12	NA	NA	Composite Sample
EW-1	3/8/2019 11:51	16.5	23.8	0.2	59.5	-3.69	-3.72	-10.87	6 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Well adjusted to assist with methane issue at MP-4Y, Low methane concentration
EW-22	3/8/2019 11:56	3.7	15.0	3.9	77.4	-3.02	-3.03	-7.63	3 No change	NA	Low methane concentration, Valve set to assist with gas probe MP-02 methane issue, low header vacuum due to issue with CS-2, Mice in manhole
EW-21	3/8/2019 12:01	15.0	19.3	3.8	61.9	-1.86	-3.01	-7.31	5 No change	NA	Low methane concentration, Valve set to assist with gas probe MP-02 methane issue, Low header vacuum due to issue with CS-2, Mice in manhole
G-1	3/8/2019 12:07	32.3	18.9	7.8	41.0	-1.18	-1.15	-7.49	10 FO	NA	High oxygen concentration, orifice plate issue, Manhole cover doesn't close, Low header vacuum due to issue with CS-2, valve set to promote gas collection from the center of landfill
HMP-7	3/8/2019 12:12	31.3	24.6	2.2	41.9	NA	NA	-7.38	NA	NA	Composite Sample, low header vacuum due to issue with CS-2
EW-20	3/8/2019 12:19	26.3	25.3	0.2	48.2	-1.89	-2.40	-3.85	10 FO	NA	Manhole removed, Orifice plate issue, Low header vacuum due to issue with CS-2
EW-19	3/8/2019 12:24	33.5	27.6	0.2	38.7	-3.41	-3.81	-4.87	8 No change	NA	Manhole removed, Low header vacuum due to issue with CS-2
G-2	3/8/2019 12:39	35.1	19.5	7.4	38.0	-0.94	-0.98	NA	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue, valve set to promote gas collection from the center of landfill
EW-18	3/8/2019 12:29	32.7	27.9	0.0	39.4	-2.96	-2.96	-3.65	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum due to issue with CS-2
HMP-6	3/8/2019 12:32	25.1	21.4	2.8	50.7	NA	NA	-7.01	NA	NA	Composite Sample, low header vacuum due to issue with CS-2
CS-3	3/8/2019 15:40	0.0	0.1	22.5	77.4	NA	NA	-6.30	NA	NA	No methane concentration, high oxygen concentration, pneumatic pump in sump, low header vacuum due to issue with CS-2, Counter:1,032
Blower - Inlet (Final)	3/8/2019 15:04	17.9	19.3	3.9	58.9	NA	NA	-19.27	NA	+360	
Blower - Outlet (Final)	3/8/2019 15:07	17.6	18.9	4.2	59.3	NA	NA	+10.68	NA	+360	

COMMENTS:

- Gas wells with positive pressure
- Gas wells with low header pressure <10.0"
- Gas wells with high CH₄ quality >50%
- Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 3/8/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4", mowing should be scheduled early spring

Snowmobile tracks found on the site during the March monitoring event.

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 4/12/2019 9:30 AM

Temp (°F): 50°F

Current Conditions/Rel. Humidity: Sunny / 32%

Barometric Pressure (in. Hg): 29.30

Trend: F S R (circle one)

Condition of Ground Surface/Recent Precipitation:

Damp -none

Monitored By: Scott Freimark (ESC)

Gas Detector Make and Model No.:

GEM 5000

Serial No.:

G501764

Date Meter Last Calibrated:

4/12/2019

Calibration Methane Span Gas:

15%

Calibration Oxygen Span Gas:

4%

Field Check - Start Time:

12:00

Field Check - End Time:

13:55

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	4/12/2019 12:06	32.3	22.5	0.1	45.1	-9.24	-9.72	-10.15	10 No Change	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to promote gas collection from the center of landfill
EW-8	4/12/2019 12:08	43.3	24.1	1.5	31.1	-11.32	-11.77	-12.87	2 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to promote gas collection from the center of landfill
G-5	4/12/2019 12:12	15.3	16.3	3.9	64.5	-8.95	-9.03	-11.08	5 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low methane concentration
G-6	4/12/2019 12:15	16.4	11.5	12.4	59.7	-0.76	-0.75	-12.39	<1 No change	NA	Low methane concentration, high oxygen concentration
G-7	4/12/2019 12:20	0.5	0.6	22.2	76.7	-0.14	-0.14	-6.46	<1 No change	NA	Low methane concentration, high oxygen concentration, low header vacuum
G-8	4/12/2019 12:24	4.0	3.6	20.2	72.2	-0.88	-0.87	-11.94	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	4/12/2019 12:26	18.0	18.9	3.9	59.2	NA	NA	-12.33	NA	NA	Composite sample
EW-10	4/12/2019 12:29	26.5	24.4	0.4	48.7	-4.87	-4.83	-6.60	7 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum due to possible lateral issue
EW-11	4/12/2019 12:33	0.8	10.4	11.6	77.2	-0.53	-0.53	-12.11	1 No change	NA	Low methane concentration, high oxygen concentration, Manhole cover doesn't close
EW-23	4/12/2019 12:37	1.6	6.5	16.8	75.1	-1.56	-1.57	-11.50	<1 No change	NA	Low methane concentration, high oxygen concentration
CS-1	4/12/2019 13:44	0.0	0.1	22.6	77.3	NA	NA	-12.07	NA	NA	Low methane concentration, high oxygen concentration 11,903 Counter:
Blower - Inlet (Final)	4/12/2019 13:49	20.5	19.3	4.2	56.0	NA	NA	-17.67	NA	+360	
Blower - Outlet (Final)	4/12/2019 13:52	20.1	18.9	4.5	56.5	NA	NA	+10.92	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH₄ quality >50%Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 4/12/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 4/12/2019 9:30 AM
 Temp (°F): 50°F Current Conditions/Rel. Humidity: Sunny / 32%
 Barometric Pressure (in. Hg): 29.30 Trend: F S R (circle one)
 Condition of Ground Surface/Recent Precipitation: Damp -none
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 4/12/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 12:40 Field Check – End Time: 13:35

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
HMP-3	4/12/2019 12:42	16.2	17.5	4.3	62.0	NA	NA	-11.84	NA	NA	Composite sample
EW-4	4/12/2019 12:45	18.6	20.1	0.1	61.2	-2.73	-2.74	-11.73	5 No change	NA	Low methane concentration
EW-24	4/12/2019 12:49	5.1	15.7	4.8	74.4	-0.42	-0.42	-11.02	<1 No change	NA	Low methane concentration, manhole cover doesn't close
EW-25	4/12/2019 12:54	9.0	17.6	1.3	72.1	-1.27	-1.27	-11.76	<1 No change	NA	Low methane concentration, manhole cover doesn't close
EW-12	4/12/2019 12:58	13.3	16.5	1.0	69.2	-2.05	-2.05	-11.28	<1 No change	NA	Low methane concentration,
EW-13	4/12/2019 13:02	1.5	15.0	3.3	80.2	-1.10	-1.11	-11.67	1 No change	NA	Low methane concentration, manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
HMP-4	4/12/2019 13:05	20.7	18.1	5.8	55.4	NA	NA	-11.30	NA	NA	Composite sample
EW-14	4/12/2019 13:10	40.2	20.3	1.5	38.0	-11.59	-11.45	-11.44	10FO	NA	Valve fully open to assist with gas probe MP-09 methane issue
G-4	4/12/2019 13:13	5.1	2.7	20.0	72.2	-2.55	-2.57	-10.13	<1 No change	NA	Low methane concentration, high oxygen concentration, valve set to assist with gas probe MP-09 methane issue
EW-15	4/12/2019 13:18	11.1	17.5	2.3	69.1	-3.73	-3.76	-11.16	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
G-3	4/12/2019 13:22	22.3	16.4	7.9	53.4	-10.54	-9.39	-11.69	2 No change	NA	High oxygen concentration, Manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
EW-16	4/12/2019 13:26	5.5	5.3	18.4	70.8	-2.27	-2.29	-11.61	2 No change	NA	Low methane concentration, high oxygen concentration, valve adjusted to assist with gas probe MP-09 methane issue, orifice plate issue
HMP-5	4/12/2019 13:31	37.9	25.3	0.6	36.2	NA	NA	-10.14	NA	NA	Composite sample
EW-17	4/12/2019 13:34	25.9	19.5	5.7	48.9	-11.00	-9.81	-11.14	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to assist with gas probe MP-09 methane issue
CS-2		No readings collected, no sampling port installed.								Counter: 3,794	
Blower - Inlet (Final)	4/12/2019 10:59	21.4	19.6	3.6	55.4	NA	NA	-17.56	NA	+360	
Blower - Outlet (Final)	4/12/2019 11:02	21.0	19.2	4.0	55.8	NA	NA	+10.87	NA	+360	

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH ₄ quality >50%
Gas wells with low CH ₄ quality <20%

Gas Collection System was running upon my arrival on 4/12/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 4/12/2019 9:30 AM
 Temp (°F): 50°F Current Conditions/Rel. Humidity: Sunny / 32%
 Barometric Pressure (in. Hg): 29.30 Trend: F S R (circle one)
 Condition of Ground Surface/Recent Precipitation: Damp -none
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 4/12/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check - Start Time: 11:05 Field Check - End Time: 12:05

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	4/12/2019 11:07	30.9	24.6	0.2	44.3	-1.35	-1.34	-13.34	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	4/12/2019 11:10	19.7	21.6	0.4	58.3	-0.33	-0.32	-6.08	3 No change	NA	Low methane concentration, No protective cover, Well adjusted to assist with methane issue at MP-4Y, Low header vacuum due to possible jumper issue
EW-2	4/12/2019 11:13	17.2	23.0	0.0	59.8	-3.07	-3.07	-3.10	10 FO	NA	Low header vacuum due to possible jumper issue, No protective cover, Well adjusted to assist with methane issue at MP-4Y
HMP-8	4/12/2019 11:16	28.2	22.6	2.6	46.6	NA	NA	-13.35	NA	NA	Composite Sample
EW-1	4/12/2019 11:19	23.4	24.1	0.2	52.3	-4.09	-4.22	-9.53	6 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Well adjusted to assist with methane issue at MP-4Y, Low header vacuum
EW-22	4/12/2019 11:23	6.9	15.7	3.0	74.4	-3.60	-2.34	-7.34	3 No change	NA	Low methane concentration, Valve set to assist with gas probe MP-02 methane issue, low header vacuum, Mice in manhole
EW-21	4/12/2019 11:28	19.1	18.2	5.3	57.4	-3.16	-3.16	-5.54	5 No change	NA	Low methane concentration, Valve set to assist with gas probe MP-02 methane issue, Low header vacuum, Mice in manhole
G-1	4/12/2019 11:32	18.7	10.1	14.9	56.3	-1.23	-1.21	-6.52	10 FO	NA	Low Methane concentration, High oxygen concentration, orifice plate issue, Manhole cover doesn't close, Low header vacuum, valve set to promote gas collection from the center of landfill
HMP-7	4/12/2019 11:37	33.8	23.7	3.1	39.4	NA	NA	-6.99	NA	NA	Composite Sample
EW-20	4/12/2019 11:45	28.7	24.6	0.2	46.5	-2.89	-3.47	-4.67	10 FO	NA	Manhole removed, Orifice plate issue, Low header vacuum
EW-19	4/12/2019 11:49	36.0	26.9	0.1	37.0	-3.90	-3.95	-4.70	8 No change	NA	Manhole removed, Low header vacuum
G-2	4/12/2019 11:54	31.7	16.9	9.5	41.9	-1.06	-1.06	-4.16	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue, valve set to promote gas collection from the center of landfill, Low header vacuum
EW-18	4/12/2019 11:57	38.4	27.5	0.3	33.8	-3.67	-2.68	-4.48	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum
HMP-6	4/12/2019 12:01	28.9	21.3	5.5	44.3	NA	NA	-6.88	NA	NA	Composite Sample
CS-3	4/12/2019 11:40	0.1	0.1	22.5	77.3	NA	NA	-7.07	NA	NA	No methane concentration, high oxygen concentration, pneumatic pump in sump, low header vacuum, Counter:1,032
Blower - Inlet (Final)	4/12/2019 13:49	20.5	19.3	4.2	56.0	NA	NA	-17.67	NA	+360	
Blower - Outlet (Final)	4/12/2019 13:52	20.1	18.9	4.5	56.5	NA	NA	+10.92	NA	+360	

COMMENTS:

- Gas wells with positive pressure
- Gas wells with low header pressure <10.0"
- Gas wells with high CH₄ quality >50%
- Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 4/12/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled early spring

Compressor #1 = 670.1, Compressor #2=815.2

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 5/15/2019 12:40 PM

Temp (°F): 65°F

Current Conditions/Rel. Humidity: Cloudy / 50%

Barometric Pressure (in. Hg): 29.20

Trend: FC (circle one)

Condition of Ground Surface/Recent Precipitation:

Dry-None

Monitored By: Scott Freimark (ESC)

Gas Detector Make and Model No.:

GEM 5000

Serial No.:

G501764

Date Meter Last Calibrated:

5/15/2019

Calibration Methane Span Gas:

15%

Calibration Oxygen Span Gas:

4%

Field Check – Start Time:

12:40

Field Check – End Time:

13:25

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	5/15/2019 12:39	33.8	20.8	0.2	45.2	-10.99	-11.59	-11.96	10 No Change	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to promote gas collection from the center of landfill
EW-8	5/15/2019 12:45	52.2	20.1	4.1	23.6	-12.63	-13.84	-15.11	2/4 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to promote gas collection from the center of landfill
G-5	5/15/2019 12:48	16.3	14.6	3.5	65.6	-10.00	-9.86	-11.83	5 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low methane concentration
G-6	5/15/2019 12:54	4.1	3.1	15.9	76.9	-1.20	-1.20	-13.52	<1 No change	NA	Low methane concentration, high oxygen concentration
G-7	5/15/2019 13:00	1.7	1.2	17.9	79.2	-0.52	-0.53	-6.16	<1 No change	NA	Low methane concentration, high oxygen concentration, low header vacuum due to possible lateral issue
G-8	5/15/2019 13:07	5.5	3.9	16.0	74.6	-0.83	-0.83	-12.53	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	5/15/2019 13:10	16.6	17.3	3.8	62.3	NA	NA	-12.83	NA	NA	Composite sample
EW-10	5/15/2019 13:14	26.3	23.7	0.2	49.8	-4.94	-4.93	-6.90	7 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum due to possible lateral issue
EW-11	5/15/2019 13:19	0.7	8.5	10.7	80.1	-0.70	-0.69	-12.61	1 No change	NA	Low methane concentration, high oxygen concentration, Manhole cover doesn't close
EW-23	5/15/2019 13:23	1.5	4.6	14.7	79.2	-1.74	-1.73	-12.50	<1 No change	NA	Low methane concentration, high oxygen concentration
CS-1	5/15/2019 14:56	0.1	0.0	18.2	81.7	NA	NA	-12.98	NA	NA	Low methane concentration, high oxygen concentration Counter: 11,903
Blower - Inlet (Initial)	5/15/2019 11:13	20.3	18.4	3.9	57.4	NA	NA	-17.75	NA	+360	
Blower - Outlet (Initial)	5/15/2019 11:16	20.1	18.1	4.1	57.7	NA	NA	+10.89	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH₄ quality >50%Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 4/12/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled early spring

LCH Panel: 23.4 hrs.

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 5/15/2019 9:45 AM
 Temp (°F): 65^oF Current Conditions/Rel. Humidity: Cloudy / 56%
 Barometric Pressure (in. Hg): 29.20 Trend: FCS (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry-None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 5/15/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 13:25 Field Check – End Time: 14:50

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
HMP-3	5/15/2019 13:26	14.1	15.4	4.2	66.3	NA	NA	-12.10	NA	NA	Composite sample
EW-4	5/15/2019 13:30	17.4	17.9	1.1	63.6	-2.57	-2.58	-12.00	5 No change	NA	Low methane concentration
EW-24	5/15/2019 13:34	6.4	14.4	3.4	75.8	-0.34	-0.34	-11.40	<1 No change	NA	Low methane concentration, manhole cover doesn't close
EW-25	5/15/2019 13:39	7.8	16.3	1.7	74.2	-1.14	-1.11	-11.84	<1 No change	NA	Low methane concentration, manhole cover doesn't close
EW-12	5/15/2019 13:44	12.7	14.9	1.3	71.1	-2.5	-2.5	-11.45	<1 No change	NA	Low methane concentration.
EW-13	5/15/2019 13:49	1.1	12.5	5.1	81.3	-1.23	-1.24	-12.02	1 No change	NA	Low methane concentration, high oxygen concentration, manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
HMP-4	5/15/2019 14:15	11.2	9.3	10.2	69.3	NA	NA	-12.30	NA	NA	Composite sample
EW-14	5/15/2019 14:19	44.3	18.7	1.2	35.8	-12.06	-11.12	-12.40	10FO	NA	Valve fully open to assist with gas probe MP-09 methane issue
G-4	5/15/2019 14:24	2.5	1.5	16.0	80.0	-2.92	-2.94	-11.89	<1 No change	NA	Low methane concentration, high oxygen concentration, valve set to assist with gas probe MP-09 methane issue
EW-15	5/15/2019 14:29	6.7	13.7	4.3	75.3	-3.96	-3.98	-11.70	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
G-3	5/15/2019 14:33	25.6	15.6	6.6	52.2	-10.23	-11.6	-12.10	2/3 Increased	NA	High oxygen concentration, Manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
EW-16	5/15/2019 14:37	7.2	5.0	14.3	73.5	-3.21	-3.17	-11.63	2 No change	NA	Low methane concentration, high oxygen concentration, valve adjusted to assist with gas probe MP-09 methane issue, orifice plate issue
HMP-5	5/15/2019 14:41	36.3	25.1	0.4	38.2	NA	NA	-12.13	NA	NA	Composite sample
EW-17	5/15/2019 14:48	23.0	14.9	7.5	54.6	-12.32	-12.54	-12.33	10 FO	NA	Manhole was removed, high oxygen concentration, well extended, and new probes installed in Sept., valve set to assist with gas probe MP-09 methane issue
CS-2		No readings collected, no sampling port installed.								Counter: 4,263	
Blower - Inlet (Final)	5/15/2019 15:00	20.5	17.8	3.7	58.0	NA	NA	-18.75	NA	+360	
Blower - Outlet (Final)	5/15/2019 15:03	20.2	17.4	3.9	58.5	NA	NA	+11.60	NA	+360	

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH ₄ quality >50%
Gas wells with low CH ₄ quality <20%

Gas Collection System was running upon my arrival on 5/15/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 5/15/2019 11:15 AM
 Temp (°F): 62°F Current Conditions/Rel. Humidity: Cloudy / 60%
 Barometric Pressure (in. Hg): 29.20 Trend: ↻ (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry-None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 5/15/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 11:15 Field Check – End Time: 12:35

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	5/15/2019 11:22	30.9	23.8	0.3	45.0	-1.59	-1.53	-15.32	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	5/15/2019 11:26	17.3	22.1	0.3	60.3	-1.40	-1.40	-7.65	3 No change	NA	Low methane concentration, No protective cover, Well adjusted to assist with methane issue at MP-4Y, Low header vacuum due to possible jumper issue
EW-2	5/15/2019 11:29	15.3	22.0	0.1	62.6	-5.33	-5.38	-5.31	10 FO	NA	Low methane concentration, Low header vacuum due to possible jumper issue, No protective cover, Well adjusted to assist with methane issue at MP-4Y
HMP-8	5/15/2019 11:32	26.2	21.1	2.9	49.8	NA	NA	-14.75	NA	NA	Composite Sample
EW-1	5/15/2019 11:38	20.7	23.0	0.3	56.0	-4.47	-4.45	-11.20	6 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Well adjusted to assist with methane issue at MP-4Y
EW-22	5/15/2019 11:44	2.7	12.6	6.1	78.6	-2.87	-4.30	-7.48	3 No change	NA	Low methane concentration, High oxygen concentration, Valve set to assist with gas probe, MP-02 methane issue, low header vacuum, Mice in manhole
EW-21	5/15/2019 11:51	15.5	14.5	6.8	63.2	-2.02	-2.12	-7.82	5 No change	NA	Low methane concentration, High oxygen concentration, Valve set to assist with gas probe MP-02 methane issue, Low header vacuum, Mice in manhole
G-1	5/15/2019 11:55	16.9	8.1	14.1	60.9	-1.21	-1.20	-7.41	10 FO	NA	Low Methane concentration, High oxygen concentration, orifice plate issue, Manhole cover doesn't close, Low header vacuum, valve set to promote gas collection from the center of landfill
HMP-7	5/15/2019 12:01	33.7	22.4	3.0	40.9	NA	NA	-7.73	NA	NA	Composite Sample
EW-20	5/15/2019 12:09	27.0	19.5	2.9	50.6	-4.21	-4.42	-6.49	10 FO	NA	Manhole removed, Orifice plate issue, Low header vacuum
EW-19	5/15/2019 12:19	33.6	25.2	0.5	40.7	-4.02	-4.22	-4.72	8/10 Increased	NA	Manhole removed, Low header vacuum
G-2	5/15/2019 12:25	32.8	16.0	8.0	43.2	-1.12	-1.21	-5.80	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue, valve set to promote gas collection from the center of landfill, Low header vacuum
EW-18	5/15/2019 12:31	37.6	26.5	0.5	35.4	-2.56	-3.49	-5.05	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum
HMP-6	5/15/2019 12:34	31.9	22.5	2.8	42.8	NA	NA	-5.55	NA	NA	Composite Sample
CS-3	5/15/2019 12:03	0.1	0.0	19.8	80.1	NA	NA	-6.65	NA	NA	No methane concentration, high oxygen concentration, pneumatic pump in sump, low header vacuum, Counter:1,032
Blower - Inlet (Final)	5/15/2019 11:13	20.3	18.4	3.9	57.4	NA	NA	-17.75	NA	+360	
Blower - Outlet (Final)	5/15/2019 11:16	20.1	18.1	4.1	57.7	NA	NA	+10.89	NA	+360	

COMMENTS:

- Gas wells with positive pressure
- Gas wells with low header pressure <10.0"
- Gas wells with high CH₄ quality >50%
- Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 5/15/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled early spring

Compressor #1 = 888.1, Compressor #2=874.6

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

ORANGE ZONE

Date & Time: 6/3/2019 10:45 AMTemp (°F): 65^oFCurrent Conditions/Rel. Humidity: Partly Cloudy / 45%Barometric Pressure (in. Hg): 30.16Trend: ↻ R (circle one)Condition of Ground Surface/Recent Precipitation: Dry-NoneMonitored By: Scott Freimark (ESC)Gas Detector Make and Model No.: GEM 5000Serial No.: G501764Date Meter Last Calibrated: 6/3/2019Calibration Methane Span Gas: 15%Calibration Oxygen Span Gas: 4%Field Check – Start Time: 10:45Field Check – End Time: 12:35

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-9	6/3/2019 10:46	34.8	21.5	0.2	43.5	-12.43	-13.00	-12.84	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to promote gas collection from the center of landfill
EW-8	6/3/2019 10:50	47.0	19.6	6.0	27.4	-11.96	-13.01	-13.40	4/5 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept., valve set to promote gas collection from the center of landfill
G-5	6/3/2019 10:54	15.0	16.1	3.6	65.3	-8.59	-9.21	-10.88	5 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Low methane concentration
G-6	6/3/2019 10:57	3.6	4.0	17.0	75.4	-1.00	-1.01	-12.41	<1 No change	NA	Low methane concentration, high oxygen concentration
G-7	6/3/2019 11:01	1.5	1.6	19.4	77.5	-0.54	-0.55	-6.33	<1 No change	NA	Low methane concentration, high oxygen concentration, low header vacuum due to possible lateral issue
G-8	6/3/2019 11:07	6.3	5.1	17.2	71.4	-0.90	-0.81	-11.35	<1 No change	NA	Low methane concentration, high oxygen concentration
HMP-2	6/3/2019 11:11	17.4	18.9	3.6	60.1	NA	NA	-12.12	NA	NA	Composite sample
EW-10	6/3/2019 11:15	27.4	25.5	0.1	47.0	-4.64	-5.63	-6.68	7/8 Increased	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum due to possible lateral issue
EW-11	6/3/2019 11:18	0.5	11.3	9.1	79.1	-0.64	-0.66	-11.32	1 No change	NA	Low methane concentration, high oxygen concentration, Manhole cover doesn't close
EW-23	6/3/2019 11:22	1.0	6.1	15.1	77.8	-1.58	-1.59	-10.84	<1 No change	NA	Low methane concentration, high oxygen concentration
CS-1	6/3/2019 12:28	0.0	0.0	20.6	79.4	NA	NA	-12.12	NA	NA	Low methane concentration, high oxygen concentration Counter: 11,904
Blower - Inlet (Initial)	6/3/2019 12:32	20.0	18.7	4.2	57.1	NA	NA	-16.47	NA	+360	
Blower - Outlet (Initial)	6/3/2019 12:35	19.8	18.5	4.4	57.3	NA	NA	+10.25	NA	+360	

COMMENTS:

Gas wells with positive pressure

Gas wells with low header pressure <10.0"

Gas wells with high CH₄ quality >50%Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 6/3/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled early spring

LCH Panel: 43.2 hrs.

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

GREEN ZONE

Date & Time: 6/3/2019 11:25 AM
 Temp (°F): 65°F Current Conditions/Rel. Humidity: Partly Cloudy / 45%
 Barometric Pressure (in. Hg): 30.16 Trend: ↻ R (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry-None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 6/3/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 11:25 Field Check – End Time: 12:25

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
HMP-3	6/3/2019 11:25	14.6	16.7	4.3	64.4	NA	NA	-11.59	NA	NA	Composite sample
EW-4	6/3/2019 11:30	18.9	19.8	0.2	61.1	-2.52	-2.55	-11.50	5 No change	NA	Low methane concentration
EW-24	6/3/2019 11:34	8.4	16.1	2.3	73.2	-0.4	-0.36	-10.95	<1 No change	NA	Low methane concentration, manhole cover doesn't close
EW-25	6/3/2019 11:39	8.6	17.3	0.8	73.3	-1.02	-1.05	-11.10	<1 No change	NA	Low methane concentration, manhole cover doesn't close
EW-12	6/3/2019 11:43	13.3	15.9	0.7	70.1	-2.8	-2.78	-10.54	<1 No change	NA	Low methane concentration,
EW-13	6/3/2019 11:47	1.3	14.2	3.6	80.9	-1.15	-1.16	-11.60	1 No change	NA	Low methane concentration, manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
HMP-4	6/3/2019 11:51	17.9	16.6	6.3	59.2	NA	NA	-11.16	NA	NA	Composite sample
EW-14	6/3/2019 11:55	39.3	21.6	1.2	37.9	-10.79	-11.28	-11.15	10FO	NA	Valve fully open to assist with gas probe MP-09 methane issue
G-4	6/3/2019 12:00	1.7	2.3	18.3	77.7	-2.67	-2.68	-10.67	<1 No change	NA	Low methane concentration, high oxygen concentration, valve set to assist with gas probe MP-09 methane issue
EW-15	6/3/2019 12:04	7.0	16.1	3.3	73.6	-3.91	-3.88	-11.40	10 FO	NA	Low methane concentration, manhole cover doesn't close, valve fully open to assist with gas probe MP-09 methane issue, orifice plate issue
G-3	6/3/2019 12:09	23.5	13.6	8.0	54.9	-10.53	-9.50	-11.03	3 No change	NA	High oxygen concentration, Manhole cover doesn't close, valve set to assist with gas probe MP-09 methane issue
EW-16	6/3/2019 12:14	7.6	6.2	15.7	70.5	-2.95	-2.96	-10.20	2 No change	NA	Low methane concentration, high oxygen concentration, valve adjusted to assist with gas probe MP-09 methane issue, orifice plate issue
HMP-5	6/3/2019 12:17	38.9	26.2	0.7	34.2	NA	NA	-11.49	NA	NA	Composite sample
EW-17	6/3/2019 12:20	25.9	17.1	8.3	48.7	-11.14	-11.29	-11.42	10 FO	NA	Manhole was removed, high oxygen concentration, well extended, and new probes installed in Sept., valve set to assist with gas probe MP-09 methane issue
CS-2	No readings collected, no sampling port installed.								Counter: 4,473		
Blower - Inlet (Final)	6/3/2019 12:32	20.0	18.7	4.2	57.1	NA	NA	-16.47	NA	+360	
Blower - Outlet (Final)	6/3/2019 12:35	19.8	18.5	4.4	57.3	NA	NA	+10.25	NA	+360	

COMMENTS:

Gas wells with positive pressure
Gas wells with low header pressure <10.0"
Gas wells with high CH ₄ quality >50%
Gas wells with low CH ₄ quality <20%

Gas Collection System was running upon my arrival on 6/3/19
 Orifice plate issue restricting vacuum. The hole in the orifice plate is too small
 Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2
 Grass height around 3-4', mowing should be scheduled early spring

**DELAFIELD SANITARY TRANSFER AND LANDFILL #00719
GAS EXTRACTION WELLS MONITORING LOG**

YELLOW ZONE

Date & Time: 6/3/2019 9:30 AM
 Temp (°F): 65°F Current Conditions/Rel. Humidity: Partly Cloudy / 45%
 Barometric Pressure (in. Hg): 30.16 Trend: ↻ R (circle one)
 Condition of Ground Surface/Recent Precipitation: Dry-None
 Monitored By: Scott Freimark (ESC)
 Gas Detector Make and Model No.: GEM 5000 Serial No.: G501764
 Date Meter Last Calibrated: 6/3/2019
 Calibration Methane Span Gas: 15% Calibration Oxygen Span Gas: 4%
 Field Check – Start Time: 9:30 Field Check – End Time: 10:45

Gas Extraction Well ID	Date/Time	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Bal (%)	Initial Vacuum/ Pressure Well (in. water)	Adjusted Vacuum/ Pressure Well (in. water)	Vacuum/ Pressure Header (in. water)	Valve Setting	Flow	Comments
EW-7	6/3/2019 9:44	34.1	25.2	0.1	40.6	-1.53	-1.53	-14.25	10 FO	NA	Manhole cover doesn't close, Orifice plate issue
EW-6	6/3/2019 9:47	18.2	22.8	0.2	58.8	-1.22	-1.21	-6.81	3 No change	NA	Low methane concentration, No protective cover, Well adjusted to assist with methane issue at MP-4Y, Low header vacuum due to possible jumper issue
EW-2	6/3/2019 9:50	14.8	22.7	0.1	62.4	-4.59	-4.64	-4.91	10 FO	NA	Low methane concentration, Low header vacuum due to possible jumper issue, No protective cover, Well adjusted to assist with methane issue at MP-4Y
HMP-8	6/3/2019 9:52	27.0	22.0	3.0	48.0	NA	NA	-11.85	NA	NA	Composite Sample
EW-1	6/3/2019 9:56	22.6	24.4	0.2	52.8	-3.43	-3.74	-10.01	6 No change	NA	Manhole was removed, well extended, and new probes installed in Sept., Well adjusted to assist with methane issue at MP-4Y
EW-22	6/3/2019 10:00	2.6	14.0	5.2	78.2	-2.93	-3.03	-6.87	3 No change	NA	Low methane concentration, High oxygen concentration, Valve set to assist with gas probe, MP-02 methane issue, low header vacuum, Mice in manhole
EW-21	6/3/2019 10:06	17.5	16.1	6.9	59.5	-2.68	-2.88	-6.91	5 No change	NA	Low methane concentration, High oxygen concentration, Valve set to assist with gas probe MP-02 methane issue, Low header vacuum, Mice in manhole
G-1	6/3/2019 10:10	17.3	8.9	14.6	59.2	-1.16	-1.15	-8.11	10 FO	NA	Low Methane concentration, High oxygen concentration, orifice plate issue, Manhole cover doesn't close, Low header vacuum, valve set to promote gas collection from the center of landfill
HMP-7	6/3/2019 10:15	34.4	23.7	3.0	38.9	NA	NA	-7.21	NA	NA	Composite Sample
EW-20	6/3/2019 10:28	32.2	24.2	0.5	43.1	-3.05	-3.00	-6.69	10 FO	NA	Manhole removed, Orifice plate issue, Low header vacuum
EW-19	6/3/2019 10:31	36.3	27.0	0.3	36.4	-2.52	-3.00	-5.87	10 FO	NA	Manhole removed, Low header vacuum
G-2	6/3/2019 10:35	31.6	17.8	7.6	43.0	-1.00	-1.10	-4.92	10 FO	NA	Manhole removed, high oxygen concentration, Orifice plate issue, valve set to promote gas collection from the center of landfill, Low header vacuum
EW-18	6/3/2019 10:39	38.5	26.4	0.6	34.5	-2.72	-2.86	-5.00	10 FO	NA	Manhole was removed, well extended, and new probes installed in Sept., Low header vacuum
HMP-6	6/3/2019 10:41	37.1	25.4	1.3	36.2	NA	NA	-5.13	NA	NA	Composite Sample
CS-3	6/3/2019 10:21	0.1	0.1	20.7	79.1	NA	NA	-6.69	NA	NA	Low methane concentration, high oxygen concentration, pneumatic pump in sump, low header vacuum, Counter:1,039
Blower - Inlet (Initial)	6/3/2019 9:36	21.2	19.6	3.6	55.6	NA	NA	-17.11	NA	+360	
Blower - Outlet (Initial)	6/3/2019 9:39	20.7	19.2	3.9	56.2	NA	NA	+9.17	NA	+360	

COMMENTS:

- Gas wells with positive pressure
- Gas wells with low header pressure <10.0"
- Gas wells with high CH₄ quality >50%
- Gas wells with low CH₄ quality <20%

FO = Valve full open

Gas Collection System was running upon my arrival on 6/3/19

Orifice plate issue restricting vacuum. The hole in the orifice plate is too small

Vacuum in the gas header was surging through out the site (1" - 4"). Condensate was surging between V-1 and V-2

Grass height around 3-4', mowing should be scheduled early spring

Compressor #1 = 968.0, Compressor #2=961.7

Attachment 4

Summary of Gas Blower Analytical Data

Environmental Sampling Corporation

Delafield Sanitary Transfer and Landfill
Gas Blower Analytical Data Summary

Volatile Organic Compounds (ppbv)	VOCs (TO-15)	
	04/27/18	04/29/19
Propene	2,500	ND
Dichlorodifluoromethane (CFC 12)	820	590
Chloromethane	ND	ND
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	110	180
Vinyl Chloride	68	82
1,3-Butadiene	ND	ND
Bromomethane	ND	ND
Chloroethane	51	70
Ethanol	ND	ND
Acetonitrile	ND	ND
Acrolein	ND	ND
Acetone	ND	ND
Trichlorofluoromethane (CFC 11)	30	ND
2-Propanol (Isopropyl Alcohol, Isopropanol)	ND	ND
Acrylonitrile	ND	ND
1,1-Dichloroethene	ND	ND
Methylene Chloride	ND	ND
3-Chloro-1-propene (Allyl Chloride)	ND	ND
Trichlorotrifluoroethane (CFC 113)	ND	ND
Carbon Disulfide	ND	ND
trans-1,2-Dichloroethene	ND	ND
1,1-Dichloroethane	ND	ND
Methyl tert-Butyl Ether (MTBE)	ND	ND
Vinyl Acetate	ND	ND
2-Butanone (MEK)	120	ND
cis-1,2-Dichloroethene	ND	ND
Ethyl Acetate	ND	ND
n-Hexane	240	240
Chloroform	ND	ND
Tetrahydrofuran (THF)	53	ND
1,2-Dichloroethane	ND	ND
1,1,1-Trichloroethane	ND	ND
Benzene	150	170
Carbon Tetrachloride	ND	ND
Cyclohexane	99	ND
1,2-Dichloropropane	ND	ND
Bromodichloromethane	ND	ND
Trichloroethene	14	ND
1,4-Dioxane	ND	ND
Methyl Methacrylate	ND	ND
n-Heptane (Heptane)	280	280
cis-1,3-Dichloropropene	ND	ND
4-Methyl-2-pentanone	ND	ND
trans-1,3-Dichloropropene	ND	ND
1,1,2-Trichloroethane	ND	ND

Environmental Sampling Corporation

**Delafield Sanitary Transfer and Landfill
Gas Blower Analytical Data Summary**

Volatile Organic Compounds (ppbV)	VOCs (TO-15)	
	04/27/18	04/29/19
Toluene	820	850
2-Hexanone	ND	ND
Dibromochloromethane	ND	ND
1,2-Dibromoethane	ND	ND
n-Butyl Acetate	ND	ND
n-Octane	500	720
Tetrachloroethene	ND	ND
Chlorobenzene	70	100
Ethylbenzene	1,000	1,500
m,p-Xylenes	2,000	2,400
Bromoform	ND	ND
Styrene	20	28
o-Xylene	580	270
n-Nonane	920	1,300
1,1,2,2-Tetrachloroethane	ND	ND
p-Isopropyltoluene (Cumene)	180	240
alpha-Pinene	390	400
n-Propylbenzene	110	130
4-Ethyltoluene	62	300
1,3,5-Trimethylbenzene	130	180
1,2,4-Trimethylbenzene	320	180
Benzyl Chloride	ND	ND
1,3-Dichlorobenzene	ND	ND
1,4-Dichlorobenzene	110	64
1,2-Dichlorobenzene	ND	ND
d-Limonene	330	250
1,2-Dibromo-3-chloropropane	ND	ND
1,2,4-Trichlorobenzene	ND	ND
Naphthalene	17	ND
Hexachlorobutadiene	ND	ND
TOTAL VOCS (ppbV):	12,094	10,524

Field Readings	4/27/2018	4/29/2019
Methane (%)	16.8	20.8
Carbon dioxide (%)	18.6	19.2
Oxygen (%)	5.2	4.5
Balance Gases (%)	59.3	55.6

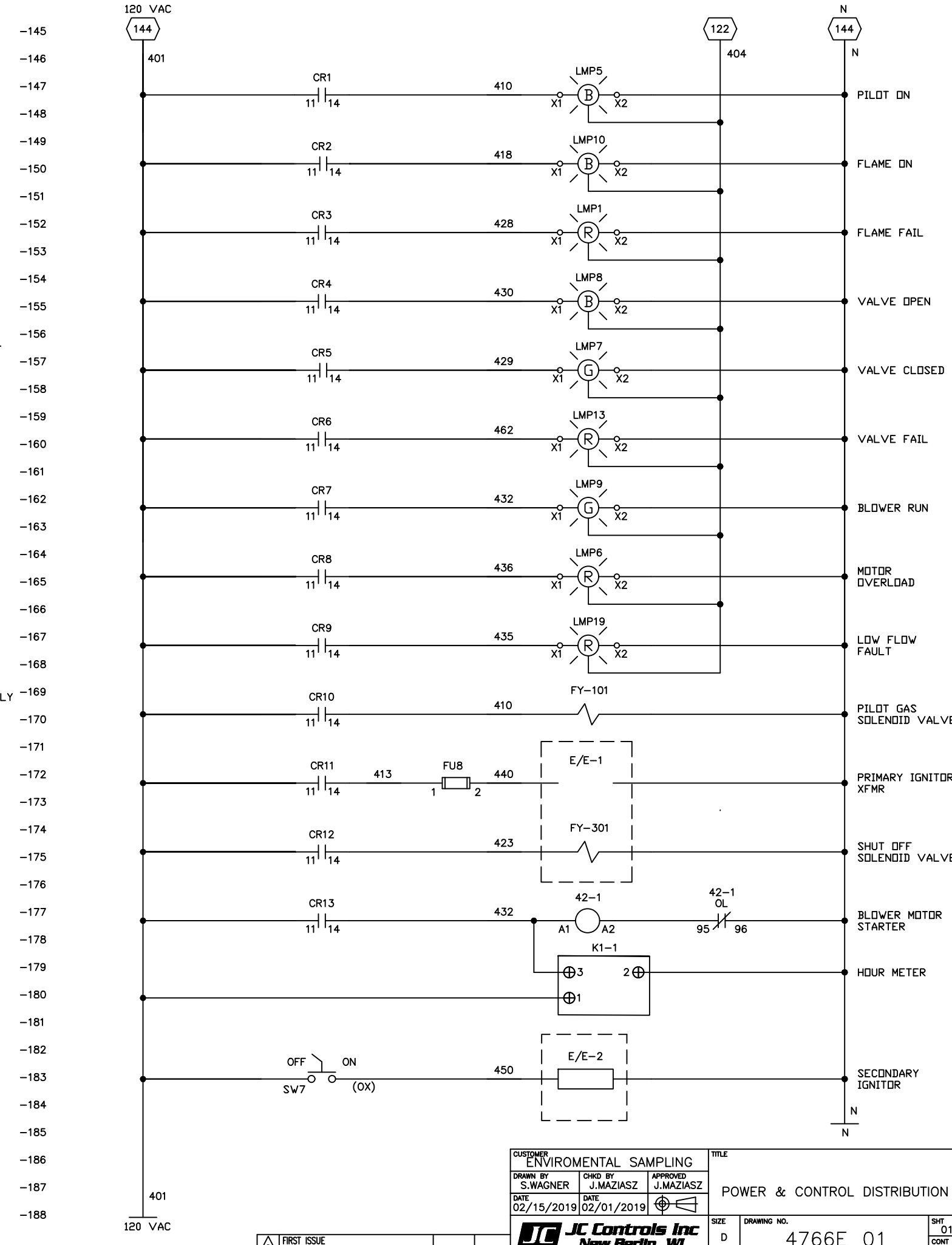
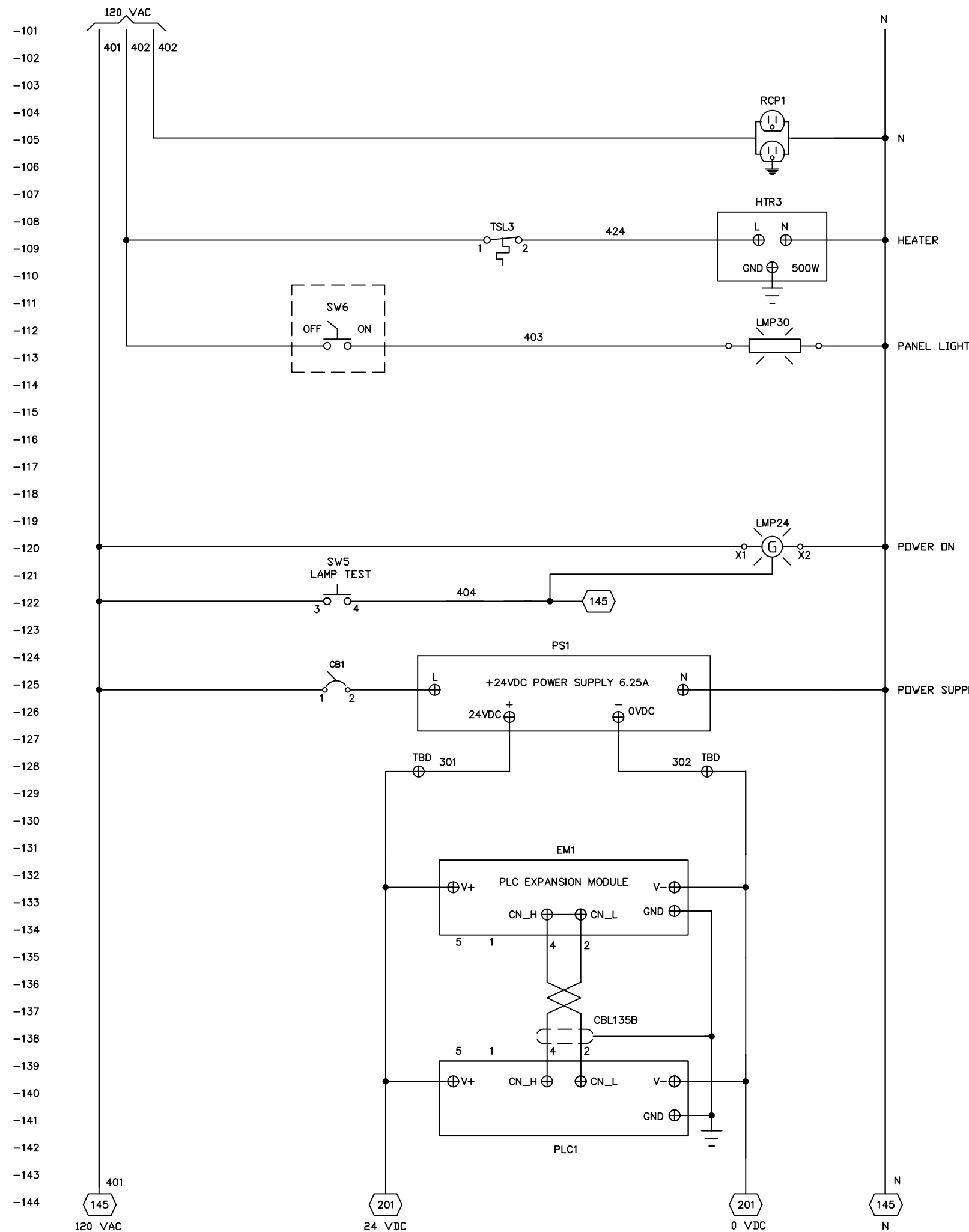
Notes:

Samples collected in April 2018 were analyzed by ALS Laboratory. Samples collected in April 2019 were analyzed by Air Technology Laboratories, Inc.

Field readings were taken with a GEM 5000 meter.

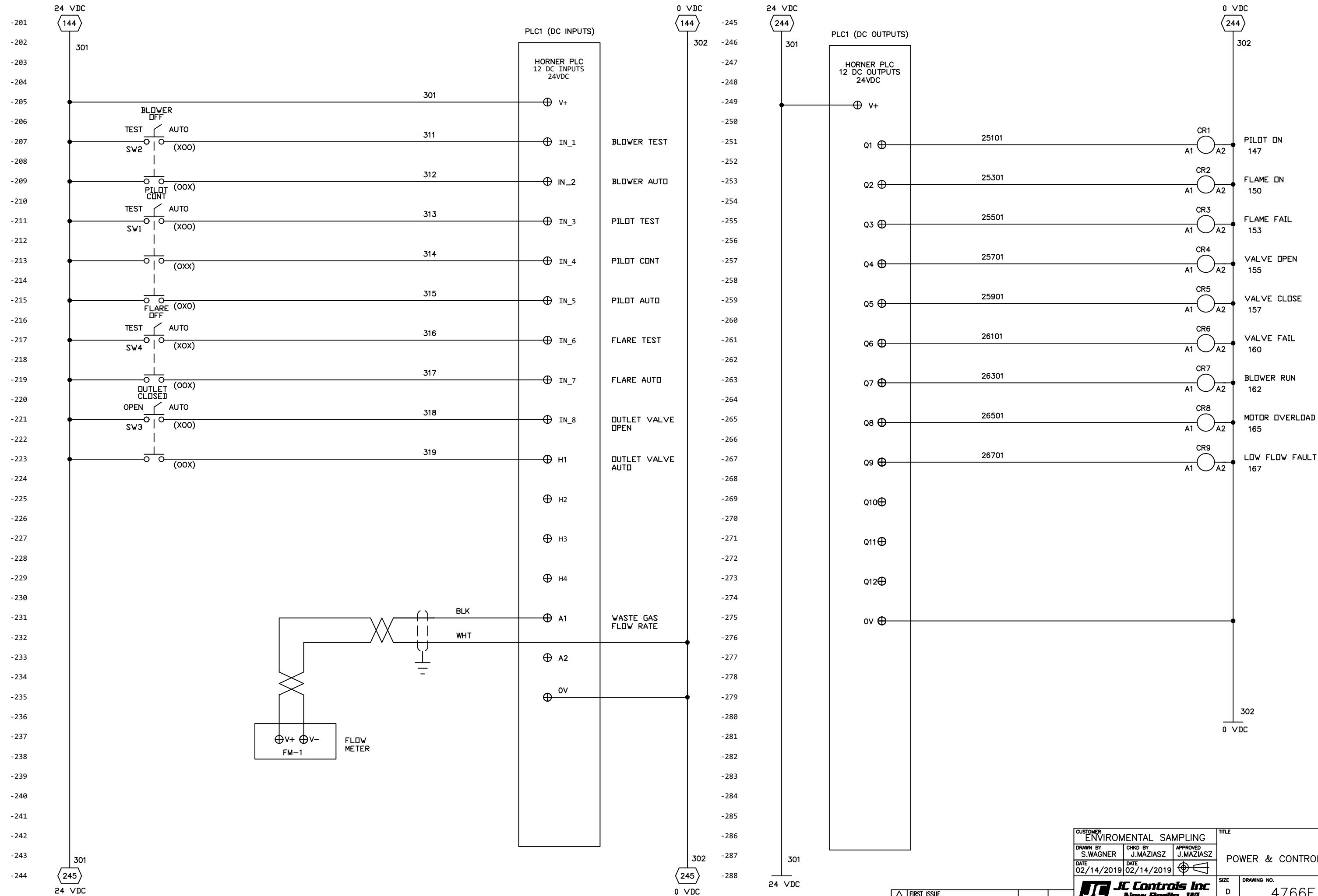
Attachment 5

Sensaphone SCADA 3000 Schematics,
Sample Fax Alarm, Alarm Callout Destinations, and
Sample Datalogger Report



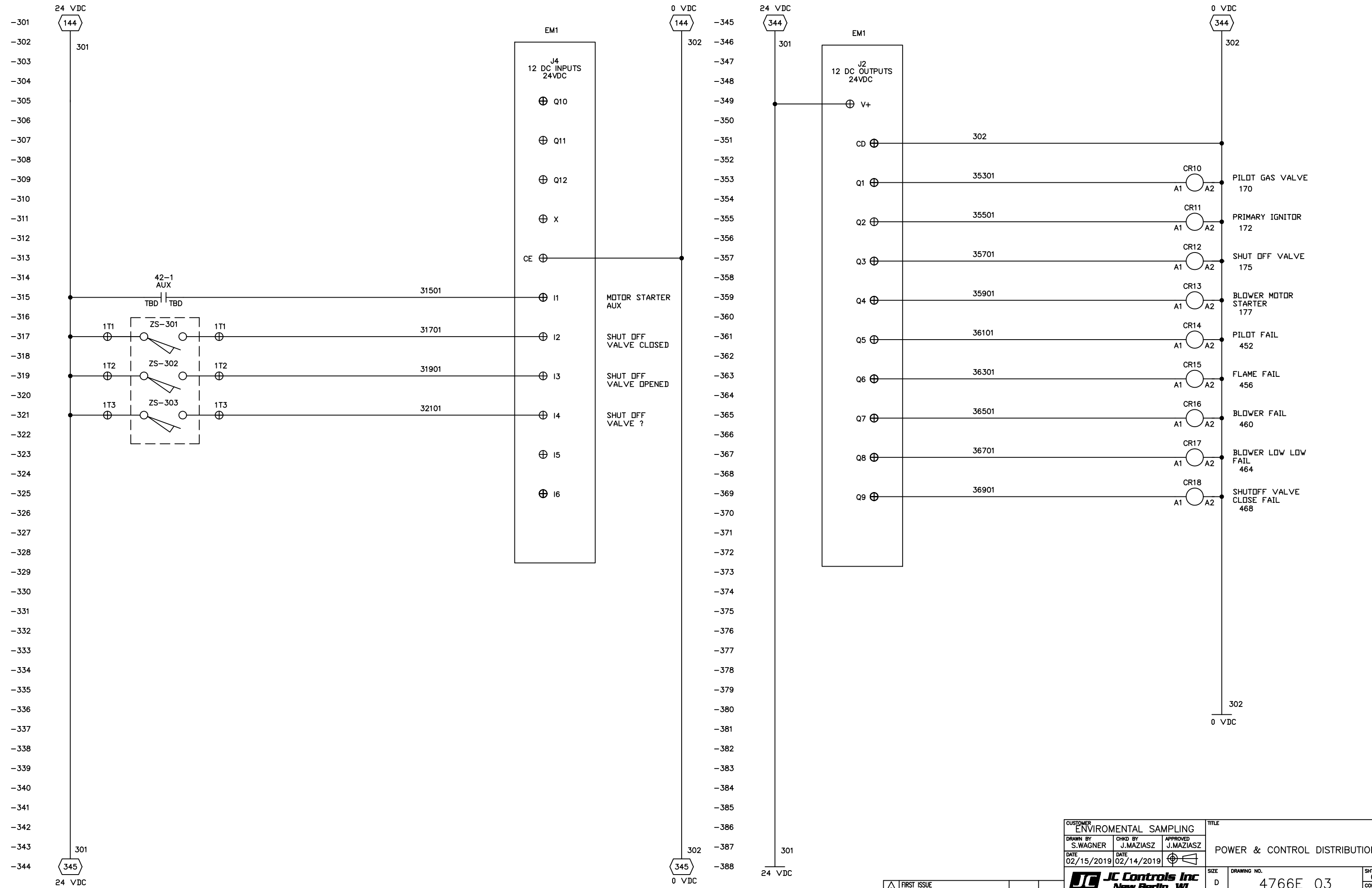
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DRAWN BY S.WAGNER	CHKD BY J.MAZIASZ	APPROVED J.MAZIASZ	
DATE 02/15/2019	DATE 02/01/2019	DATE 02/01/2019	
JC Controls Inc New Berlin, WI			SIZE D DRAWING NO. 4766E_01 SHT 01 CONT 02



FIRST ISSUE



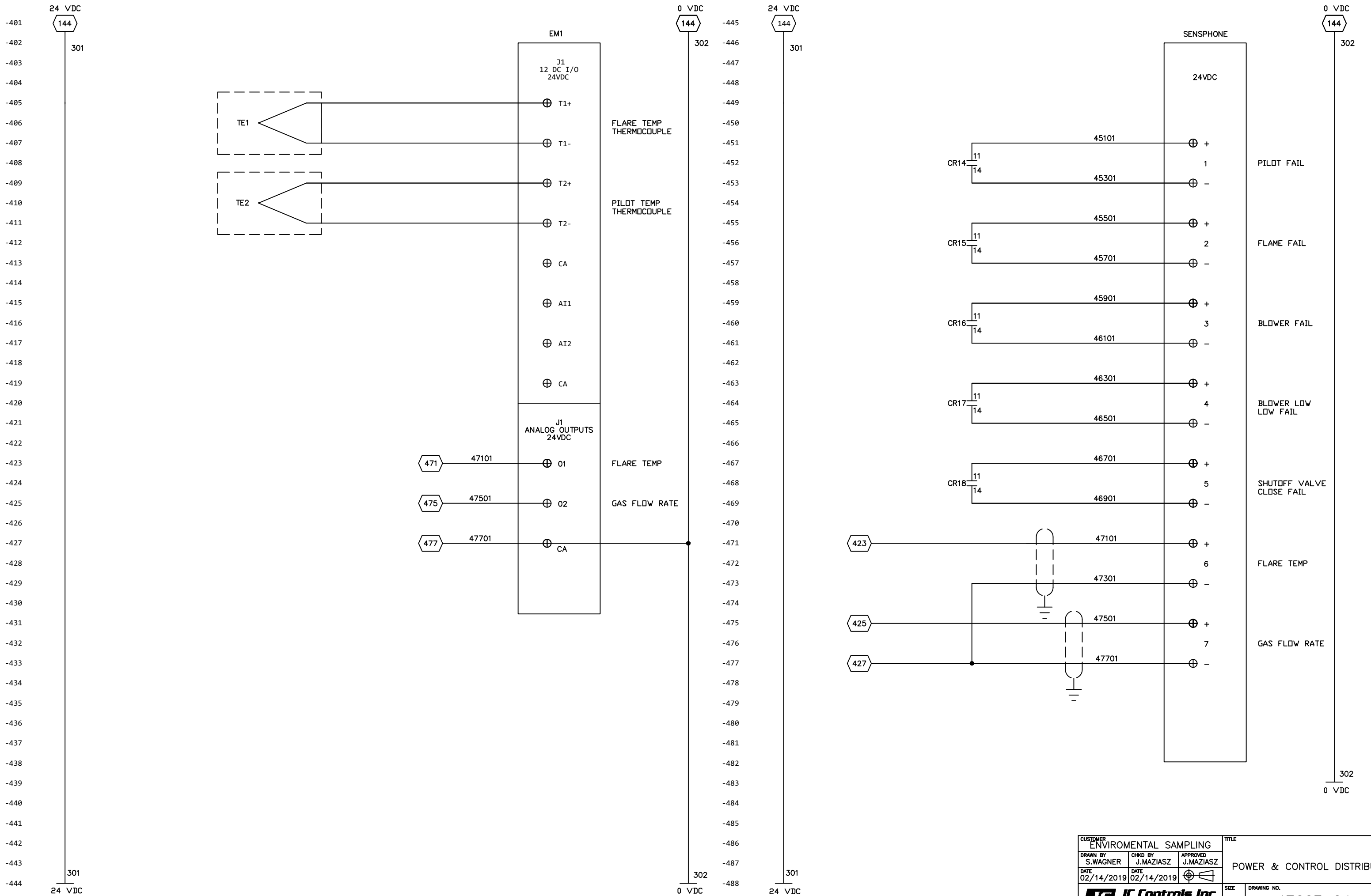
CUSTOMER ENVIRONMENTAL SAMPLING			TITLE
DRAWN BY S.WAGNER	CHKD BY J.MAZIASZ	APPROVED J.MAZIASZ	POWER & CONTROL DISTRIBUTION
DATE 02/14/2019	DATE 02/14/2019		
JC Controls Inc New Berlin, WI			SIZE D DRAWING NO. 4766E_02 SHT 02 CONT 03

FIRST ISSUE



CUSTOMER ENVIROMENTAL SAMPLING			TITLE POWER & CONTROL DISTRIBUTION		
DRAWN BY S.WAGNER	CHKD BY J.MAZIASZ	APPROVED J.MAZIASZ			
DATE 02/15/2019	DATE 02/14/2019				
 JC Controls Inc New Berlin, WI		SIZE D	DRAWING NO. 4766E_03	SHT 03	CONT 04

FIRST ISSUE



CUSTOMER ENVIROMENTAL SAMPLING			TITLE
DRAWN BY S.WAGNER	CHKD BY J.MAZIASZ	APPROVED J.MAZIASZ	POWER & CONTROL DISTRIBUTION
DATE 02/14/2019	DATE 02/14/2019		
			SIZE D
DRAWING NO. 4766E_04			SHT 04
			CONT -

AS SHIPPED 10/31/17 JM

SCADA 3000 ALARM REPORT

TIME: 09:15:40 PM
DATE: 06/10/2019
TO: ESC (FAX)
914144275034
FROM: Delafield
PHONE: 2626462083
PAGE 1 OF 01

SYSTEM FAIL exists. Off

Sensaphone SCADA 3000 Alarm Dialout Destinations

SCADA 3000: 'Delafield', Dialout Destinations

	Name	Destination	Call Zones				Alarm Call Mode	Dial Type	Intercall Delay	Send Report
			1	2	3	4				
0	FRANK	914143339453	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Inform	Voice	60	<input type="checkbox"/>
1	ESC	914144275033	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Inform	Voice	60	<input type="checkbox"/>
2	ESC (FAX)	914144275034	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Inform	Fax	60	<input checked="" type="checkbox"/>
3			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Until Act	Voice	60	<input type="checkbox"/>

Next Page Page 1 of 16 Edit Zones OK

Delafield Sanitary Transfer and Landfill

DATE/TIME	FLARE_TEMP	GAS_FLOW
6/5/2019 21:39	1361.3812	203.9368
6/5/2019 21:54	1373.512	203.1479
6/5/2019 22:09	1346.451	203.9368
6/5/2019 22:24	1369.7794	203.3733
6/5/2019 22:39	1352.0498	204.0495
6/5/2019 22:54	1363.2474	204.2749
6/5/2019 23:09	1358.5818	204.0495
6/5/2019 23:24	1374.4452	204.5003
6/5/2019 23:39	1366.98	204.5003
6/5/2019 23:54	1349.2504	204.8383
6/6/2019 0:09	1320.3231	205.5145
6/6/2019 0:24	1370.7126	205.4018
6/6/2019 0:39	1343.6516	204.8383
6/6/2019 0:54	1357.6487	205.1764
6/6/2019 1:09	1354.8492	204.951
6/6/2019 1:24	1347.3842	205.0637
6/6/2019 1:39	1374.4452	205.1764
6/6/2019 1:54	1357.6487	204.951
6/6/2019 2:09	1350.1836	204.6129
6/6/2019 2:24	1340.8522	205.4018
6/6/2019 2:39	1337.1196	205.6272
6/6/2019 2:54	1335.2533	205.9653
6/6/2019 3:09	1326.8551	205.7399
6/6/2019 3:24	1325.922	206.078
6/6/2019 3:39	1358.5818	205.9653
6/6/2019 3:54	1329.6545	206.1907
6/6/2019 4:09	1340.8522	206.1907
6/6/2019 4:24	1340.8522	206.1907
6/6/2019 4:39	1331.5208	205.6272
6/6/2019 4:54	1332.4539	205.0637
6/6/2019 5:09	1333.3871	205.6272
6/6/2019 5:24	1364.1807	205.7399
6/6/2019 5:39	1337.1196	205.5145
6/6/2019 5:54	1361.3812	205.1764
6/6/2019 6:09	1371.6458	205.6272
6/6/2019 6:24	1365.1138	205.5145
6/6/2019 6:39	1354.8492	204.7256
6/6/2019 6:54	1354.8492	204.5003
6/6/2019 7:09	1345.5178	204.2749
6/6/2019 7:24	1352.0498	204.5003
6/6/2019 7:39	1349.2504	203.9368
6/6/2019 7:54	1346.451	203.9368
6/6/2019 8:09	1288.5964	204.0495
6/6/2019 8:24	1315.6575	203.486
6/6/2019 8:39	1360.4481	203.0352
6/6/2019 8:54	1342.7184	203.5987

Attachment 6

Historic Groundwater Data Summaries

Environmental Sampling Corporation

DELAFIELD LANDFILL
Groundwater Monitoring Well Data

NR-2A	INORGANIC PARAMETERS (NR 140 PAL / ES)															
	Alkalinity NS mg/L	Hardness NS mg/L	Chloride (125 / 250) mg/L	SO ₄ (125 / 250) mg/L	CN (0.04 / 0.2) mg/L	TKN NS mg/L	NO2+NO3 (2 / 10) mg/L	As (1 / 10) ug/L	Ba (400 / 2000) ug/L	Be (0.4 / 4) ug/L	Cd (0.5 / 5) ug/L	Ca NS mg/L	Cr (10 / 100) ug/L	Cu (130 / 1300) ug/L	Diss. Fe (150 / 300) ug/L	Mg NS mg/L
DATE																
10/30/17	280	2,350	230	14	<0.0040	<0.52	0.81	3.2	210	1.0	<0.30	499	49.2	131	179 J	269
04/27/18	290	1,490	41	6.2	<0.0030	<0.23	1.00	2.2	169	<0.29	<0.30	298	38.7	83.8	1,040	181
10/29/18	250	2,580	130	14	<0.0030	<0.23	1.3	5.1	259	<0.29	0.57 J	607	42.6	86.3	348	258
04/29/19	160	773	88	5.2	<0.0030	<0.23	1.0	3.0	91.7	0.38 J	<0.30	191	7.6 J	26.7	815	71.8

Table Notes are provided on the last page of the data summary

Environmental Sampling Corporation

DELAFIELD LANDFILL
Groundwater Monitoring Well Data

NR-2A	INORGANIC PARAMETERS (NR140 PAL / ES)								FIELD PARAMETERS				VOCs (EPA MCL / WDNR ES)	
	Tot. Mn # (25/50, 60/300) ug/L	Dis. Mn # (25/50, 60/300) ug/L	Na NS mg/L	Pb (1.5 / 15) ug/L	Sb (1.2 / 6) ug/L	Se (10 / 50) ug/L	Tl (0.4 / 2) ug/L	Zn (2500 / 5000) ug/L	pH NS std. Units	Conductivity NS umhos/cm	Temp. NS deg. C	Depth to Water ft.	Groundwater Elevation ft.MSL	None Detected
10/30/17	2,080	365	168	64.4	0.43 J	<4.0	<0.35	259	7.31	1,010	13.0	59.30	--	None Detected
04/27/18	1,410 M	281	89.7	37.5 M	0.52 J	9.6 J	<0.70	191	7.42	1,065	13.6	60.35	--	None Detected
10/29/18	1,560	43.4	123.0	37.6	<3.0	<4.0	<2.2	166	7.67	678	10.9	59.15	--	None Detected
04/29/19	573	282	71.4	9.8	<3.0	7.7 J B	<2.2	63.7	7.67	552	11.7	59.40	--	None Detected

Notes:

Groundwater samples are unfiltered with the exception of dissolved iron and dissolved manganese.

mg/L = milligrams per liter

ug/L = micrograms per liter

NS = no standard established

s.u. = standard units

-Manganese has NR140 standards for both Public Welfare (25/50 ug/L) and Public Health (60/300 ug/L).

J=Estimated concentration below laboratory quantitation level.

B=Analyte detected in the associate Method Blank

M=Matrix Spike and/or Matrix Spike Duplicate recovery outside acceptance limits.

WDNR ES: Wisconsin Department of Natural Resources (WDNR) Enforcement Standard (ES)

WDNR NR140 Public Welfare Standards: chloride, iron, manganese, sulfate, and zinc.

WDNR NR140 Public Health Standards: cyanide, nitrate, nitrite, arsenic, barium, beryllium, cadmium, chromium, copper, lead, antimony, selenium, thallium, and VOC's.

126 = Indicates a PAL exceedance

590 = Indicates an ES exceedance

0.3 J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

Analyte abbreviations:

SO₄: sulfate

Ba: barium

Cr: chromium

Mn: manganese

Se: selenium

CN: cyanide

Be: beryllium

Cu: copper

Na: sodium

Tl: thallium

TKN: total kjeldahl nitrogen

Cd: cadmium

Fe: iron

Pb: lead

Zn: zinc

As: arsenic

Ca: calcium

Mg: magnesium

Sb: antimony

Environmental Sampling Corporation

DELAFIELD LANDFILL
Groundwater Monitoring Well Data

NR-2B	INORGANIC PARAMETERS (NR 140 PAL / ES)															
	Alkalinity NS mg/L	Hardness NS mg/L	Chloride (125 / 250) mg/L	SO ₄ (125 / 250) mg/L	CN (0.04 / 0.2) mg/L	TKN NS mg/L	NO ₂ +NO ₃ (2 / 10) mg/L	As (1 / 10) ug/L	Ba (400 / 2000) ug/L	Be (0.4 / 4) ug/L	Cd (0.5 / 5) ug/L	Ca NS mg/L	Cr (10 / 100) ug/L	Cu (130 / 1300) ug/L	Diss. Fe (150 / 300) ug/L	Mg NS mg/L
DATE																
10/30/17	590	493	170	20	<0.0040	8.5	<0.063	9.7	232	<0.29	<0.30	110	<5.0	5.5 J	1,990	53.0
04/27/18	600	468	130	17	<0.0030	9.7	<0.057	9.3	215	<0.29	<0.30	100	<5.0	<4.4	2,160	53.1
10/29/18	590	548	150	18	0.0077	9.3	<0.057	8.6	253	<0.29	<0.30	121	<5.0	21.6	2,030	59.8
04/29/19	520	488	140	18	<0.0030	10	<0.057	10.5	222	<0.29	<0.30	110	<5.0	13.6 J	1,980	51.9

Table Notes are provided on the last page of the data summary

Environmental Sampling Corporation

DELAFIELD LANDFILL
Groundwater Monitoring Well Data

NR-2B	INORGANIC PARAMETERS (NR140 PAL / ES)								FIELD PARAMETERS				VOCs (EPA MCL / WDNR ES)		
	Tot. Mn # (25/50, 60/300)	Dis. Mn # (25/50, 60/300)	Na NS	Pb (1.5 / 15)	Sb (1.2 / 6)	Se (10 / 50)	Tl (0.4 / 2)	Zn (2500 / 5000)	pH NS	Conductivity NS	Temp. NS	Depth to Water	Groundwater Elevation	1,1-Dichloroethane (85 / 850)	1,4-Dichlorobenzene (15 / 75)
	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	std. Units	umhos/cm	deg. C	ft.	ft.MSL	ug/L	ug/L
10/30/17	192	177	64.0	<1.4	<0.40	<4.0	<0.35	7.2 J	7.09	1,237	9.8	54.65	--	0.56 J	0.62 J
04/27/18	156	164	56.8	<1.4	<0.40	<4.0	<0.70	12.9	7.26	1,240	11.6	56.60	--	0.94 J	0.67 J
10/29/18	184	166	66.3	5.8	<3.0	<4.0	<2.2	13.9	7.24	1,112	10.9	53.95	--	0.97 J	0.64 J
04/29/19	161	161	69.8	<1.4	<3.0	7.6 JB	<2.2	4.6 J	7.28	1,192	11.3	53.85	--	0.94 J	<0.60

Notes:

Groundwater samples are unfiltered with the exception of dissolved iron and dissolved manganese.

mg/L = milligrams per liter

ug/L = micrograms per liter

NS = no standard established

s.u. = standard units

-Manganese has NR140 standards for both Public Welfare (25/50 ug/L) and Public Health (60/300 ug/L).

J=Estimated concentration below laboratory quantitation level.

WDNR ES: Wisconsin Department of Natural Resources (WDNR) Enforcement Standard (ES)

WDNR NR140 Public Welfare Standards: chloride, iron, manganese, sulfate, and zinc.

WDNR NR140 Public Health Standards: cyanide, nitrate, nitrite, arsenic, barium, beryllium, cadmium, chromium, copper, lead, antimony, selenium, thallium, and VOC's.

126 = Indicates a PAL exceedance

590 = Indicates an ES exceedance

0.3 J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

Analyte abbreviations:

SO ₄ : sulfate	Ba: barium	Cr: chromium	Mn: manganese	Se: selenium
CN: cyanide	Be: beryllium	Cu: copper	Na: sodium	Tl: thallium
TKN: total kjeldahl nitrogen	Cd: cadmium	Fe: iron	Pb: lead	Zn: zinc
As: arsenic	Ca: calcium	Mg: magnesium	Sb: antimony	

Attachment 7

Historic Leachate Data Summary

Environmental Sampling Corporation

DELAFIELD LANDFILL
Leachate Monitoring Data

Leachate Wet Well	INORGANIC PARAMETERS																					
	Alkalinity	Hardness	Chloride	BOD	TSS	Oil & Grease	SO ₄	CN	TKN	NO ₂ +NO ₃	As	Ba	Be	Cd	Ca	Cr	Cu	Diss. Fe	Mg	Tot. Mn	Dis. Mn	Na
DATE	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	mg/L
10/30/17	1,100	707	330	--	--	--	24 J	0.011 J	67	49	<3.0	168	<0.29	<0.30	119	<5.0	10.9 J	86.2	99.5	94.3	88.2	208
04/27/18	2,800	712	790	--	--	--	9.40	0.0031 J M	350 M Y	1.7	<3.0	177	0.41 J	<0.30	71	7.0 J	<4.4	4.15	130	53.3	64.9	665
12/04/18 #	2,900	867	980	63	40	<12	2.1 J	0.0075 J M	88	2.0	<3.0	306	<0.29	<0.30	91.4	10.9 J	<4.4	0.976 M	155	85.0	77.3	720
04/29/19	2,700	760	850	--	--	--	2.7	0.0038 J M	190 M	1.7	3.1 J	251	<0.29	<0.30	81.8	9.8 J	12.2 J	2.56	135	77.0	78.7	690 M

Table Notes are provided on the last page of the data summary

Environmental Sampling Corporation

DELAFIELD LANDFILL
Leachate Monitoring Data

Leachate Wet Well	INORGANIC PARAMETERS					FIELD PARAMETERS			VOCs															
	Pb	Sb	Se	Tl	Zn	pH	Conductivity	Temp.	1,4-Dichloro-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Acetone	Benzene	Chloro-benzene	Chloro-ethane	Diisopropyl Ether	Ethylbenzene	Methyl-tert-butyl-ether	p-Isopropyl-toluene	Tetra-hydrofuran	Toluene	m- & p-Xylene	o-Xylene	
DATE	ug/L	ug/L	ug/L	ug/L	ug/L	std. Units	umhos/cm	deg. C	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
10/30/17	2.7 J	<3.0	<4.0	<2.2	11.3	7.58	2,930	11.9	<0.60	<0.40	<0.40	<9.0	0.38 J	1.1 J	<0.50	<0.29	<0.30	<30.0	<0.50	21	<0.30	<0.50	<0.40	
04/27/18	<1.4 M Y	6.7 J	<4.0	<2.2	9.4	7.22	6,500	12.0	3.7	1.0 J	<0.40	12 J	3.8	7.4	1.7	0.63 J	<0.30	0.78 J	<0.50	160	0.35 J	5.4	3.8	
12/04/18 #	3.2 J	<3.0	<4.0	<2.2	16.4	6.69	7,230	6.8	<6.0	<4.0	<4.0	<90	4.4	<5.0	18.0	<2.9	<3.0	<3.0	<5.0	260	<3.0	<5.0	<4.0	
04/29/19	<1.4	3.3 J	4.6 J B	4.5 J	6.9 J	7.23	5,920	10.8	4.0	3.0	0.60 J	<9.0	4.1	11.0	1.4 J	0.61 J	0.58 J	0.70 J	0.55 J	190	0.80 J	10.0	6.0	

Notes:

Leachate samples are unfiltered. Samples were filtered at the lab for analysis of dissolved iron and dissolved manganese.

mg/L = milligrams per liter

ug/L = micrograms per liter

NS = no standard established

s.u. = standard units

J=Estimated concentration below laboratory quantitation level.

M=Matrix Spike and/or Matrix Spike Duplicate recovery outside acceptance limits.

Y=Replicate/Duplicate precision outside acceptance limits.

- The leachate load out area was flooded during the October 2018 event and no sample could be collected. A leachate sample was collected in December 2018 to fulfill the semi-annual monitoring requirement.

Analyte abbreviations:

SO ₄ : sulfate	Ba: barium	Cr: chromium	Mn: manganese	Se: selenium
CN: cyanide	Be: beryllium	Cu: copper	Na: sodium	Tl: thallium
TKN: total kjeldahl nitrogen	Cd: cadmium	Fe: iron	Pb: lead	Zn: zinc
As: arsenic	Ca: calcium	Mg: magnesium	Sb: antimony	