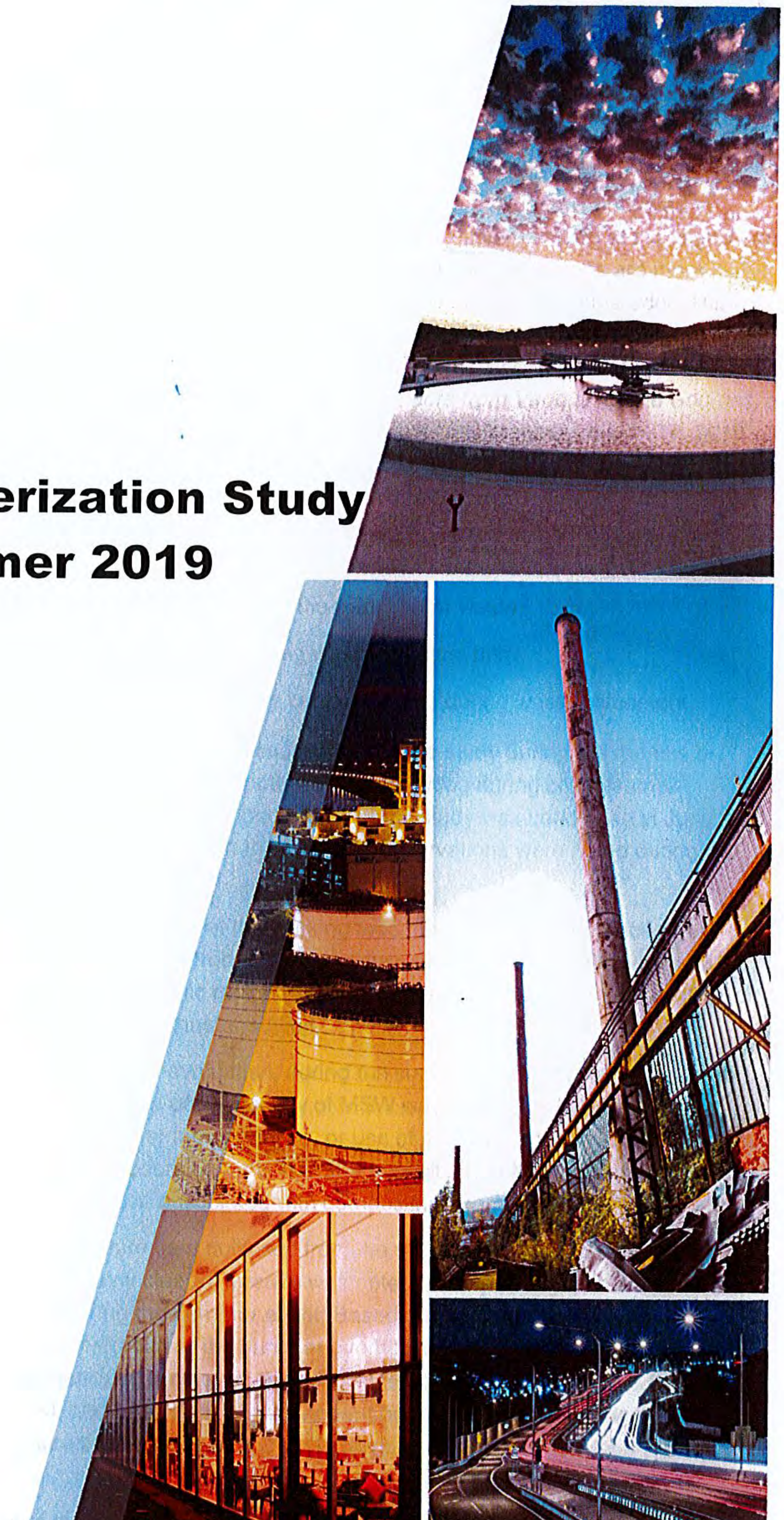
Waste Characterization Study

Phase 2 – Summer 2019

High Acres Landfill and
Recycling Center
Fairport, New York

CONFIDENTIAL



Executive Summary

GHD, Inc. (GHD) completed the second and final phase of a two-part evaluation conducted to determine the extent and nature of potential odor sources from materials managed at the High Acres Landfill and Recycling Center (HALRC), to determine if wastes from certain regions are more odorous than others and if the mode of transportation to HALRC has an effect on the odor. This evaluation was conducted in response to correspondence from the New York State Department of Environmental Conservation (NYSDEC) to HALRC, and is being completed in accordance with a previously prepared December 2018 Work Plan *Evaluation of Odors from Various Waste Sources,* a scope of work negotiated with the Town of Perinton, and the previously prepared March 15, 2019 *Waste Characterization Study.*

Work covered in this phase of the evaluation included:

- Review of the types and volumes of incoming waste;
- An evaluation of time versus temperature during the transport of waste;
- Visual and olfactory characterizations of incoming waste streams; and
- Collection of a series of air samples from waste containers and during waste placement.

GHD conducted the initial phase of field testing associated with the study during the months of December 2018 and January 2019, to evaluate potential odor sources during cold weather conditions. Field testing associated with the second phase of the study was conducted in June and July 2019 during warm weather conditions, and the following observations were noted during the second phase of the evaluation:

- Based on the visual observations made at the working face, no significant differences were identified related to waste composition from the various incoming municipal solid waste (MSW) waste streams based on the geographic region of origin, mode of transportation, or whether or not the waste was routed through a transfer station.
- Similar to the previous cold weather evaluation, during the summer observation period, there was no discernable difference in the odor intensity of MSW waste streams based on the geographic region of origin, mode of transportation, or use of a transfer station. Certain waste streams were noted to generate odors of a much higher intensity than MSW. These include biosolids/sewage sludge and those associated with composting operations.
- While variability in the temperature data collected from the various locations and modes of transportation were noted, a fairly clear difference was noted in temperature profiles of transfer trailers and rail containers during the summer event. Based on the data collected, the temperature increases observed during the summer event followed distinct patterns based on the mode of transportation utilized. However, the general temperature increase was less than one may have anticipated, and based on the subsequent odor intensity monitoring conducted, the variation in temperature profiles did not appear to have an impact on the overall odor observed.
- A review of the results of the chemical analysis did not indicate a common odor causing compound or waste stream as containing particularly odorous compounds, which is similar to

what was noted during the previous sampling conducted during the winter sampling event. It was noted that the results from the sampling done during warm weather conditions yielded concentrations notably higher than those collected under cold weather conditions, with several more samples exceeding the established odor threshold for various compounds[1] at the working face, where the sampling was conducted. However, the results were still variable, and likely indicative of the composition of the individual sample, rather than the region of which the waste was generated, waste age, or mode of transport.

The purpose of the overall study was to determine if wastes from certain regions are more odorous than others and if the mode of transportation to HALRC has an effect on the odor. The evaluation included the collection of data and field observations to satisfy a series of objectives, which consisted of collecting data during both cold weather and warm weather conditions to factor in seasonal variation related to odor. The overall findings from the completed two phase evaluation are presented, and include the following:

- Based on the waste characterization information reviewed and visual observations made at the working face, no significant differences were identified related to waste composition from the various incoming MSW waste streams based on the geographic region of origin, mode of transportation, or whether or not the waste was routed through a transfer station.
- Due to the different collection timeframes, the age of residential MSW waste upon arrival at HALRC is not markedly different based on the geographic region of origin or mode of transportation. This is based on review of collection frequencies, transportation time frames, and transfer station operating requirements in New York City (NYC) versus those of other parts of New York.
- Based on the data collected and field observations made during both cold weather and warm weather conditions, there was no discernable difference in the odor intensity of MSW waste streams based on the geographic region of origin, mode of transportation, or use of a transfer station.
  - There are isolated incoming waste loads that may periodically present an increased odor intensity, but the relative odor intensity is based more on the individual waste contained within the load than the geographic region of origin or mode of transportation utilized.
  - There are also certain waste streams at HALRC that generate odors of a higher intensity than typical MSW, the most notable being biosolids/sewage sludge from the local Monroe County Department of Environmental Services (MCDES).
  - Some waste streams, such as food waste and the overall composting operations, appear to have variable odor intensity dependent on a seasonal basis.
- During the warm weather data collection period, a fairly clear difference was noted in the temperature profiles of transfer trailers and rail containers. The waste in the transfer trailers was much more subject to the overall ambient air temperature, whereas the waste in the rail containers gradually increased over time. This is contrasted with the data collected during the winter data collection period, that while showing there was some variability in the temperature

[1] As noted in "Table 3.1 – Detection Limit for Anticipated Waste Odor Compounds" of the March 15, 2019 *Waste Characterization Study*.

data collected from the various locations during the winter data collection period, no real trends indicating a temperature increase during transport were identified. While the difference between the seasons is notable, based on the subsequent odor intensity monitoring conducted, the variation in temperature profiles does not appear to have a significant impact on the overall odor intensities observed during this study period.

- While the concentrations of common odor causing compounds were notably higher during the warm weather conditions than those observed during cold weather conditions, a review of the results of the chemical analysis did not indicate a common odor causing compound or waste stream as containing particularly odorous compounds. The results were variable, and likely indicative of the composition of the individual waste streams associated with the individual samples, rather than the region of which the waste was generated, or mode of transport.
- The EPI cover system performed well during the initial trial period conducted, which was on-going during the winter observation period. This alternative cover system has continued to assist HALRC operations staff with odor control at the working face as it eliminates the need for cover stripping in the morning. HALRC requested and received approval from the NYSDEC to continue use of the material, and its use has been incorporated as part of normal operations.

The purpose of the evaluation was to determine if particular incoming wastes are more odorous than others, especially as they relate to the geographic region of origin and mode of transport to HALRC. Based on the research conducted, sampling performed and field observations over the course of the evaluation, GHD found little difference overall in the composition of the typical MSW delivered to HALRC when compared by either geographic region of origin or method of delivery to the facility.

GHD also noted that some waste streams do exhibit an increase in odor over others, however, the increased odor is likely more indicative of the actual composition of the incoming individual waste streams, rather than the region from which the waste was generated, or mode of transport to the site. For instance, the highest odor intensities observed were associated with the biosolid/sludge generated at the MCDES and not MSW. Additionally, individual materials within discrete MSW loads could also have an impact as to the overall odor associated with a specific load, which is believed to account for the variety in odor observed in loads of what appears to be typical MSW. Specific testing as to the source of odor within the general MSW waste stream was not conducted as is considered outside the purview of this evaluation.

GHD recommends HALRC continue to utilize the measures and operational practices put in place over the past eighteen months to continue managing potential odors from facility operations, which includes continuing to monitor for materials that can create odors and ensuring proper controls are in-place to manage odor effectively.

With the submittal of this report, HALRC concludes the work outlined in the December 2018 Work Plan and has completed the facility's response to the October 5, 2018 letter from NYSDEC.

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1. Project Description

1.1 Background

On behalf of Waste Management of New York, LLC (WMNY) and the High Acres Landfill and Recycling Center (HALRC), GHD, Inc. (GHD) conducted a two part evaluation to determine the extent and nature of potential odor sources from material being managed at the facility (refer to Figure 1.1 for the Site Location). The overall evaluation was in response to the October 5, 2018 letter from New York State Department of Environmental Conservation (NYSDEC) to HALRC, and was conducted in accordance with the December 2018 Work Plan *Evaluation of Odors from Various Waste Sources* and a scope of work negotiated with the Town of Perinton. Both the NYSDEC and the Town of Perinton approved the December 2018 Work Plan prior to the start of the evaluation in December 2018.

The evaluation was separated into two phases to determine any potential seasonal effects related to waste-odors at HALRC. The initial phase of the evaluation was conducted during the cold weather months of December 2018 and January 2019, with results documented in a report entitled *Waste Characterization Study* dated March 15, 2019. This report presents the second phase of the evaluation, which includes the findings from similar testing conducted during the warm weather conditions of June and July 2019, as well as an overall summary of the findings and conclusions from the two evaluation periods.

1.2 Objectives

As outlined in the approved Work Plan submitted in December 2018, the overall objectives of this evaluation were to:

1. Evaluate municipal solid waste (MSW) sources, characteristics, and their relationships to odor generation prior to incorporation into an MSW landfill.
   - The majority of this task was completed as part of the initial phase of the evaluation, as it consisted of a review of incoming waste data, regional waste generation, and a literature review, all of which was discussed in the March 15, 2019 *Waste Characterization Study*. Incoming waste data for the warm weather evaluation period was also reviewed to confirm similarity with historic data. Observations related to the type of waste and associated odor generation based on delivery method and geographic region were completed during both phases of the evaluation.
2. Evaluate conditions, including odor generation, of MSW being delivered to the HALRC from various sources and modes of transportation.
   - The majority of this task was completed as part of the initial phase of the evaluation, and discussed in the March 15, 2019 *Waste Characterization Study*. Additional visual and olfactory observations as well as air sampling based on waste type, delivery method, and geographic region were completed during both phases of the evaluation.
3. Evaluate handling, transportation and storage operations and potential effect on odor generation.

- This task consisted of reviewing incoming waste data, regional data regarding waste generation, and a literature review on potential odor generation of waste based on storage and transport methods, which was completed as part of the initial phase of the evaluation, and discussed in the March 15, 2019 *Waste Characterization Study*.

4. Evaluate odors from MSW prior to incorporation into the landfill from various locations and modes of transportation.

    - This task consisted of a literature review on odor generation of waste prior to disposal, reviewing incoming waste data, and regional data regarding waste generation, which was completed as part of the initial phase of the evaluation, and discussed in the March 15, 2019 *Waste Characterization Study*. Additional visual and olfactory observations as well as air sampling based on waste type, delivery method, and geographic region were completed as part of both phases of the evaluation.

5. Evaluate odors at the working face:

    - Stripping of daily cover
    - MSW odor from local vs. long haul vs. rail
        - Visual and olfactory observations during the stripping of daily cover were conducted during both phases of the evaluation.
        - Visual and olfactory observations, air monitoring, and air sampling was conducted of different waste types and methods of transport during both phases of the evaluation.

6. Conduct a field study to identify "typical" waste streams from various sources.

    - This task included a review of incoming waste data, as well as regional data regarding waste generation, which was completed as part of the initial phase of the evaluation, and discussed in the March 15, 2019 *Waste Characterization Study*. In addition, visual observations related to incoming waste was conducted during both phases of the evaluation.

7. Collect air samples associated with MSW from various sources and modes of transportation to evaluate the presence of compounds associated with odors.

    - Air samples were collected from different waste types, geographic regions, and methods of transport during both phases of the evaluation.

8. Conduct bench scale testing of a nitrogen purge on the generation of methane from containers.

    - This task consisted of collecting samples and conducting a bench scale test, which was completed as part of the initial phase of the evaluation, and discussed in the March 15, 2019 *Waste Characterization Study*.

9. Research methods for recording temperature in shipping containers.

    - This task was completed ahead of the initial phase of the evaluation, with the same methods used during the initial testing during cold weather conditions as those used during the warm weather conditions. Test methods were discussed at length in the

March 15, 2019 *Waste Characterization Study*, and are only briefly summarized in this report.

As noted in the above summary, several of the overall objectives were previously completed as part of the first phase of the evaluation and detailed in the March 15, 2019 *Waste Characterization Study*. The field observations and testing conducted during the warm weather event replicated those conducted during the cold weather event. Thus, the objectives for this second phase of the evaluation were to conduct the necessary additional field observations related to the types of waste and associated odor based on delivery method and geographic region of origin during warm weather. This included visual and olfactory observations, air monitoring, and the collection of air samples during warm weather conditions.

The information gathered during the warm weather evaluation period (June/July 2019) event is summarized in the following sections, which outline the activities performed, and the results of the various observations made.

1.2.1 Previously Reported Information

The March 15, 2019 *Waste Characterization Study* documented the field observations and testing conducted during cold weather conditions in December 2018 and January 2019. Similar testing during warm weather conditions serves as the basis for the majority of this report.

While the field observations and testing conducted during the two evaluation periods was similar, it should be noted that the March 15, 2019 *Waste Characterization Study* report included discussions on a number of items that were not replicated during the second phase of the evaluation. Thus additional discussion related to the following items are not included as part of this follow-up discussion:

- Discussion on the type of waste materials received by HALRC, other than to verify similarity with previously presented data
- Breakdown of the geographic regions utilizing HALRC
- The relationship of collection, storage and transportation times to the various geographic regions
- Literature search related to research conducted to date related to waste odors from collection through arrival at a landfill
- Summary of available information on the use of inert gases during transportation of waste
- Evaluation of a plastic film used as alternate daily cover material
- Results of bench scale tests using a nitrogen purge on waste samples

2. Waste Material Acceptance

Historical information related to the volumes and types of material accepted at HALRC were included in the March 15, 2019 *Waste Characterization Study*. Similar information for the time period associated with the warm weather evaluation period (June 24th through July 3rd) is included for comparison purposes with historical information.

2.1 Updated Regional Sources of Waste Generation

Similar to the breakdown of waste generation sources included in the March 2019 *Waste Characterization Study*, GHD reviewed waste receipts for the dates of the warm weather evaluation period (June 24th through July 3rd) to ensure there were no major changes in the geographic composition of the waste between the evaluation periods and typical historical sources. This comparison is summarized in Table 2.1.

Table 2.1 Comparison of Waste Generation Sources

Region	2017	2018*	Cold Weather Period (12/10/18 – 12/15/18, 1/8/19 – 1/12/19 only)	Warm Weather Period (6/24/19 – 7/3/19 only)
Local	35.0%	26.3%	25.0%	31.0%
Regional	16.8%	9.1%	14.2%	14.7%
NYC	48.0%	64.5%	60.7%	53.3%
Out-of-State	0.2%	0.1%	0.1%	1.0%

* The 2018 Annual Report for HALRC was revised on 5/10/2019. The revised report included a correction to the geographic location of 275,967.42 tons of waste. While the overall volume did not change, the geographic region associated with this volume of waste was changed from "Local" to "NYC". The percentages in Table 2.1 reflect this revision.

For comparison purposes the four geographic regions are the same as those discussed in the March 15, 2019 *Waste Characterization Study*, and include:

- Local – which includes waste from Monroe County, Wayne County, and the greater Rochester area.
- Regional – which includes waste received from counties outside of the local area, including both nearby counties, such as Ontario County and Livingston County, as well as other regional centers throughout the state, including Albany and Syracuse, but not from within the boundaries of New York City.
- NYC – which includes waste received from transfer stations located in New York City (NYC), including both Kings and Queens Counties.
- Out-of-state – which includes waste received from outside the State of New York.

Incoming waste rates vary based on a host of factors, which is outside the scope of this evaluation. However, based on the data summarized in Table 2.1, the incoming waste rates for the period of the warm weather evaluation were generally similar to those previously observed by the facility, and thus can be considered representative to those historically observed for the purpose of the evaluation.

2.2 Updated Types of Waste

GHD also reviewed incoming waste receipts at HALRC to determine the types of non-hazardous solid waste received at the facility and how the percentages of the various wastes compare with those summarized during the first phase of the evaluation. Waste received was divided into the same broad categories as previously summarized, including MSW, sewage sludge, construction and demolition debris, industrial waste, asbestos, contaminated soils, material beneficially used on-site, yard waste/food waste, and other. Table 2.2 summarizes the information previously included March 2019 *Waste Characterization Study* in comparison to the data from the warm weather evaluation period (June 24th through July 3rd).

Table 2.2 Comparison of Incoming Waste Type Percentages

Waste Type	2017	2018	Cold Weather Period (12/10/18 – 12/15/18, 1/8/19 – 1/12/19 only)	Warm Weather Period (6/24/19 – 7/3/19 only)
MSW	67.3	72.8	67.4	59.8
Construction and Demolition	5.2	6.7	8.3	17.0
Industrial	0.5	1.6	3.3	4.3
Contaminated Soil	0.2	0.1	0.0	0.2
Asbestos	0.3	0.3	0.7	1.6
Sewage Sludge	4.0	4.2	4.8	4.5
Beneficially Used Material	19.7	12.9	11.2	11.7
Yard Waste/Food Waste	1.2	1.5	4.4	0.8
Other	1.7	0	0.1	0

There are some items of note in Table 2.2, including:

- While the percentage of MSW was noted as lower during the evaluation period in comparison to the rates historically seen, it is believed to be more representative of the increased percentage seen in some of the waste types that experience seasonal variability, than an actual decrease in the volume of incoming MSW.
- The percentage of construction and demolition debris incoming during the evaluation period is significantly higher than that of 2017 and 2018, as well as during the cold weather evaluation period. The same is true for asbestos. This is likely due to the percentages for 2017 and 2018 being annualized over the entire year, whereas the percentages for the warm weather evaluation period are a snapshot in time during the summer construction season, when there is an increase in construction activity, and thus an increase in the volume of construction and demolition debris, including asbestos containing material, being managed by disposal facilities like HALRC.
- The percentage of industrial waste during the evaluation period was also greater than that seen historically. Being this waste stream includes a wide variety of non-hazardous waste generated by commercial, industrial and manufacturing facilities, it is difficult to know if this is representative of seasonal variability or if it represents an actual trend.
- The percentage of sewage sludge stays relatively consistent. This shows HALRC has a system in place to actively manage the volume of sludges the facility receives with other incoming tonnage.
- The percentage of yard waste and food waste during the evaluation period was slightly less than seen in 2017 and 2018. It is believed this is again influenced by the timing of the evaluation period, as during the summer, area schools are not in session and universities operate at lower enrollment, both of which are major contributors to the food waste recycling program. This

contrasts with the higher volumes observed during the winter evaluation period, when schools were in session. Additionally, the middle of the summer is also a period of lower incoming rates of yard waste, which typically experiences peak volumes during the spring and fall seasons.

3. Field Observations and Testing

This Section describes the field activities performed during the warm weather evaluation period from June 24th through July 3rd. Field observation activities were replicated to the extent possible during the winter event, and included a comparison of the waste from the various geographic areas by observing the physical characteristics of the MSW following transportation and then disposal at the working face by monitoring:

- Temperature (data loggers were used to track internal temps within containerized waste) from placement to unloading
- Moisture content
- Pressure (to see if there is pressure build up within the transport containers)
- CH_4, O_2 and CO_2 content using a Landtec GEM 5000 instrument (GEM) (this instrument is commonly used for LFG monitoring)

This data, and other visual and olfactory observations made on-site is further discussed in the following sections. Representative pictures from the various stages of the evaluation are included in Appendix A.

3.1 General Evaluation of Odor

HALRC has established an investigation protocol that is followed in response to odor complaints received on the facility's odor hotline. The protocol includes training requirements for anyone performing an odor investigation, as well as outlines the procedures and standards to be followed to ensure a comprehensive investigation is completed for each complaint received. It should be noted that all odor complaints are currently being investigated by an independent third party, Towpath Investigative Services. In addition to the odor investigation protocol, HALRC has implemented a number of additional operational criteria to assist with odor management, such as having an independent third party perform routine off-site monitoring, and having HALRC technicians on-call 24 hours a day, 7 days a week to respond to system issues. A copy of the odor investigation protocol along with a comprehensive summary of HALRC's landfill odor management operating criteria is included in Appendix B.

Barton & Loguidice (B&L), an independent, third party consulting firm, continues to regularly investigate odor issues at HALRC, as well as conduct periodic odor monitoring. As part of this evaluation, B&L, in coordination with GHD, assisted with the odor evaluation. B&L's work included conducting odor intensity observations using the n-Butanol scale concurrently with those collected by GHD. In addition, as shown in Table 3.1, at 7:45 AM on July 3rd B&L evaluated both off-site as well as on-site conditions for odor experienced in and around HALRC.

Table 3.1 Odor Intensity Around HALRC on July 3rd

Odor Intensity	Notes
None	No detections along Rte. 31F (off-site)
0.5	Detected a minor waste odor on Perinton Parkway near the Little League baseball field for approximately 300 feet (off-site)
None	No odors detected along Waynesport Road (off-site)
0.0 – 0.5	Observed a waste odor along the site access road (on-site) between the temporary flare and the compost area

Notes: Odor Intensity is based on n-Butanol scale, ranging from 0 to 8.

B&L and GHD concurrently conducted odor intensity observations throughout the summer evaluation period. Results of the odor intensity readings for the incoming waste containers are included on Table 3.3 and in the discussion in Section 3.3.2.

3.1.1 Evaluation of EPI Cover

Previous review of odor complaints indicated cover stripping operations were a major source of odor at HALRC. Operations staff began implementing a series of operational practices in an effort to reduce odors associated with cover stripping, which included testing alternative cover materials. Testing included a trial of the EPI cover system, which consists of a non-reusable polyethylene film, placed at the working face at the end of the operating day. Since the film does not require removal prior to waste placement, it provides continuous coverage in the control of odors and emissions until landfill operations begin the following morning, eliminating the need to strip cover soils each morning. HALRC operations personnel were pleased with the findings during the EPI cover system trial period, as the material was found to be easy to deploy, does not require removal prior to waste placement activities, was able to be used year round, and most importantly, appeared to assist with controlling odors at the working face.

Based on the positive results observed during the initial trial period, HALRC requested and was granted approval from the NYSDEC to use the EPI cover system as part of normal operations. Thus, HALRC continues to use the EPI cover system as part of routine daily cover operational practices, as the product continues to assist HALRC operations personnel with the control of odor at the working face.

3.2 Evaluation of Time/Temperature Data During Transport

As discussed in the March 15, 2019 *Waste Characterization Study*, GHD previously researched methods to measure temperature of the waste during transport, and determined the use of temperature probes with data logging capabilities would be reliable. To remain consistent, the same model CargoData temperature logging units used during the initial phase of the study were also used during the summer event.

Similar to the winter event, temperature data was collected from randomly selected rail containers and transfer trailers during transport using these temperature logging units. The temperature logging units were each placed in a protective, perforated 4-inch PVC tube (approximately 5 feet in length with a PVC cap on each end) that was painted a bright orange color to aid in retrieval. The protected units were then placed with the waste within the rail container or transfer trailer during loading at the selected transfer stations, with the unit's location within the waste container or trailer being documented. To be consistent with the data collected during the cold weather conditions, containers originated from the Review Avenue, Varick Avenue, and MTS (including containers from the Hamilton Avenue and Southwest) Transfer Stations.

Upon arrival at HALRC, the temperature logging units were retrieved as the waste was unloaded, and data from the data logger was downloaded on-site. All of the temperature logging units delivered to HALRC were located, and data was able to be retrieved from each data logger. It should be noted that due to the random selection of containers, some temperature logging units placed in containers at the MTS Transfer Station were inadvertently placed in rail containers that were delivered to other disposal locations outside the State of New York. These units were not included in the evaluation, and replacement units were placed in other containers upon discovery.

Once downloaded, temperature data was then plotted to illustrate the internal temperature of the containerized waste over time from initial placement within the container until unloading at HALRC. Ambient outdoor temperature data for the Rochester, NY weather station was also overlaid on the plot of the waste temperature data for the purpose of comparison. The location of the temperature probe within the container is also noted, as similar to the winter event, the location within the container was determined to have an effect on the temperatures measured. Representative photographs are included in Appendix A, and the time versus temperature plots are included in Appendix C. Based on review of the temperature date collected during June and early July, the following is noted:

- In general, the rail containers from the Review Avenue, Varick Avenue, and MTS Transfer Stations had similar temperature profiles, where the temperature within the rail cars gradually increased at a consistent rate over time.
    - Temperatures in the majority of the rail containers from the Review Avenue and Varick Avenue Transfer Stations, and one of the rail containers from the MTS Transfer Station (MTS Hamilton #0122) initially decreased, and then gradually increased through the duration of the time in the container.
    - Temperatures in the three of the four rail containers from the MTS Transfer Station (MTS Southwest #1315, MTS Hamilton #2109, and MTS Southwest #1657) quickly increased upon placement in the container, and then continued to increase at a more gradual rate through the duration of the time in the container. It is believed that high ambient air temperatures combined with sunny conditions likely contributed to the quick initial temperature rise observed in these containers.
- The temperatures in one of the rail containers from the Varick Avenue Transfer Station (Varick #9779) varied from the general pattern observed in the other rail containers. The temperature fluctuated during the daytime and night-time periods, with an overall slight increase in temperature during the duration of the time within the container. The overall temperature increase noted in this container was less than that observed in the other rail containers, varying from a low of 80.3°F to a high of 88.8°F.
- Temperature logging units were placed in two long-haul transfer trailers originating from the Varick Avenue Transfer Station on June 20, 2019, Long Haul #1 and Long Haul #2. Each long-haul transfer trailer had two units placed with the waste, one near the rear, and one closer

to the front of the transfer trailer. The temperature profiles for the four units were similar, appearing to reflect the diurnal cycle of the ambient air temperature, though the temperatures spiked considerably higher during the warmer parts of the day, and did not cool off to the same extent in the overnight hours. For instance, the ambient air temperatures versus those logged within the transfer trailers during the period from June 20th to June 27th were as follows:

- Ambient air temperature: ranged from 54°F to 88°F
- Long Haul #1 (rear): ranged from 66.9°F to 104.8°F
- Long Haul #1 (mid to front): ranged from 61.1°F to 107.9°F
- Long Haul #2 (rear): ranged from 59.3°F to 104.7°F
- Long Haul #2 (front): ranged from 66.5°F to 94.8°F

Anticipated factors potentially contributing to the temperature increases observed include the ambient temperatures outside the container, radiant heat affects from sunlight, and the heat generated as a byproduct of refuse decomposition, as temperature increase can be a sign that aerobic decomposition is occurring. For instance, during the summer event, the warmer ambient temperature conditions during initial placement of the waste in containers from the MTS Transfer Station likely influenced the higher initial temperatures within the MTS Transfer Station rail containers.

As discussed in the March 15, 2019 Waste Characterization Report, a marked increase in temperature could also indicate that the air, or gases, inside the container are expanding and causing internal pressure. Slight increases in pressure did appear to occur in the containers from the Hamilton Avenue Transfer Station to a very limited extent during the winter event, however, this was not observed during the summer event. The type of rail containers used varies by transfer station, and those from the Hamilton Avenue Transfer Station consist of containers having a different closing mechanism, which more tightly seals the gasket around the doors. In contrast, the containers from the Varick Avenue Transfer Station and the Review Avenue Transfer Station have top lids that generally rest on the body of the container and are locked into place but not firmly sealed. Details related to the construction of the rail containers was previously submitted in the March 15, 2019 Waste Characterization Study. It should be noted that none of the containers used for the transport of waste to HALRC are sealed such that they are air tight.

It should be noted that for the purpose of this evaluation, upon arrival at HALRC the rail containers associated with this study were staged at HALRC for one to four days to simulate potentially longer transfer durations or other delays. This is not HALRC's normal operational practice, but done to allow for the observation of the containers as unloaded and collection of the necessary samples as outlined in the December 2018 Work Plan. Typical operations include the systematic unloading of the containers upon arrival, with the vast majority of the containers being unloaded within 24 hours of arrival, and all containers being unloaded within two days of arrival. Due to inclement weather or operational issues, rail containers may periodically be staged on-site for longer periods of time, but this happens infrequently. As outlined in the March 15, 2019 Waste Characterization Study, rail transport can add between one to three days due to the wait times associated with additional containers being loaded with waste and then placed on rail cars, and then also connections with other freight material being transported via the railways. There have also been occasions where due to issues with the rail system, delivery of the rail containers may be delayed, but again, this occurs with rarity. Thus, the additional staging time is not without precedent. However, this is noted as the temperature trends noted may be exaggerated over that of normal operations due to the staging of the containers for the purpose of the study.

3.3 Visual and Olfactory Characterization of Waste Streams

3.3.1 Visual Inspection of Incoming Waste

Visual inspections of the incoming waste were conducted as part of this evaluation, similar to those conducted during the winter event. These included visual observations of waste from each geographic region utilizing HALRC, including local haul routes, those from long-haul transfer trucks, and of waste delivered via rail from NYC.

During the period from June 24th through July 3rd, GHD personnel were on-site to observe waste as it was received at HALRC. To ensure continuity between the two evaluation periods, GHD and B&L personnel conducting the observations during the summer event were the same individuals onsite during the winter event.

Similar to the winter event, upon arrival at the site, GHD discussed the projects objectives with HALRC staff, in an effort to coordinate communication regarding the arrival of the targeted waste loads by region, such that GHD was present at the working face upon their delivery to the facility. This allowed GHD to select targeted loads, and then be at the working face as the selected loads were unloaded, such that direct visual observations as to the physical characteristics by region could be made, as well as conduct air sampling for laboratory analysis.

GHD personnel viewed waste as it was unloaded at the working face for its visual characteristics in an effort to identify any distinguishable characteristics between the wastes of the various regions (local, regional, NYC). The detailed field observations are summarized in Table 3.2. In addition, GHD documented the types of waste observed, that included taking a series of pictures of waste from each location. A selection of representative photos is included in Appendix A.

Table 3.2 Visual Characterization of Waste by Geographic Area

Date & Time	Source of Material (Region)	Description	Corresponding Sample ID (if applicable)
6/24 10:20	Rear Load Truck (362929 - Local)	Mostly black bagged household waste, yard waste (leaves, branches, grasses, soil), mattress (including comforter and pillows), and furniture (2 couches)	01
6/24 11:10	Front Load Truck (211394 - Local)	Approximately 75% of load is food waste from a school and an elder-care facility; remaining 25% is white and blue bagged household waste	02
6/25 9:55	Biosolids/Sludge (Truck S-141)	Black, cohesive material; soils with high moisture content	Unsafe area; no sample
6/25 10:20	Biosolids/Sludge (Truck S-119)	Black, cohesive material; soils with high moisture content	03

Table 3.2 Visual Characterization of Waste by Geographic Area

Date & Time	Source of Material (Region)	Description	Corresponding Sample ID (if applicable)
6/25 14:07	Rail Container (WMNY9779)	Majority household waste in plastic bags, including organics and food waste, mattress/comforter, furniture and wood	04
6/25 14:25	Rail Container (WMNY10619)	Majority household waste in plastic bags, including organics and food waste, carpet, wood furniture, wood and plastics	05
6/26 7:50	Long Haul #1 (422/545R - Varick TS)	Majority is black and clear bagged household waste, including food waste, wood/fiberboard, cardboard, foam, furniture, curtains, mattresses, carpet, plastics, glass/plastic bottles	06
6/26 11:15	Rail Container (WMNY10319)	Majority bagged household waste, including organics and food waste, twigs and branches, wood/particle board, plastics/toys, and mattress/cushions	07
6/26 11:25	Rail Container (USWX9305)	Black and white plastic bagged waste, including food waste, yard clippings, wood pieces, mattress/cushions, metal pieces, furniture, rug, styrofoam, plastic and glass bottles	08
6/26 14:15	Food Waste (Truck 413405)	Assorted fruits and vegetables, rice, breads, coffee grounds, pasta	09
6/27 7:25	Long Haul #2 (422/30 - Varick TS)	Majority bagged household waste, including 4-5 mattresses with pillows, cushions, wood/furniture, yard waste, food waste, cardboard, foam, and glass/plastics bottles	10
6/27 11:20	Rail Container (WMNY10410)	Majority black and white bagged household waste, including furniture, wood, pallets, plastics, some metal; significant amount of unbagged, unidentifiable organic material	11
6/27 11:25	Rail Container (USWX9531)	Majority bagged household waste, including wood fencing, plywood, furniture, pillows/cushions, foam, yard waste, futon mattress	12
6/27 14:25	Compost Pile (undisturbed)	Oldest compost on-site, specific age unknown; Mix of leaves, wood, brush	13
6/28 9:35	Rail Container (WMNY10999)	Majority bagged household waste, including wood and plastics, furniture, mattresses, rug/carpet	14
6/28 9:40	Rail Container (WMNY10337)	Majority bagged household waste, including yard and garden waste, bicycle, foam, 3 mattresses, metal tubing	15
6/28 13:45	Compost Pile (disturbed)	Black, earthy material	16
7/2 10:25	Rail Container (WMNY1315)	Majority bagged household waste, including food waste, plastics, bottles, cans, wood, carpet/rug, pillows/cushions, yard waste, holiday	17

Table 3.2 Visual Characterization of Waste by Geographic Area

Date & Time	Source of Material (Region)	Description	Corresponding Sample ID (if applicable)
		decorations, exercise equipment; liquid present when initially dumped	
7/2 10:30	Rail Container (WMNY2109)	Majority bagged household waste, including food waste, furniture, mattress/cushions, plastics, bottles, cans, wood, foam, yard waste, shopping carts	18
7/3 9:40	Rail Container (WMNY1657)	Majority is household waste in black and white plastic bags, including food waste, yard waste, wood, plastics, mattress, rug/carpet, cat litter, bottles/cans	19
7/3 9:45	Rail Container (WMNY0122)	Majority is black and clear bagged household and food waste; also included yard waste, vinyl siding, wood/particle board, saw dust, shopping carts, two mattresses, bottles/cans	20

Similar to the observations made during the winter event, based on the visual inspections of the waste at the working face, no visual differentiation between the typical MSW from the various regions could be made. The majority of the waste delivered consisted of household MSW, along with other materials such as yard waste, empty containers, and furniture, all of which are typically found in residential MSW.

GHD also collected a series of representative air samples, which are further discussed in Section 3.4 and odor intensity readings of the various waste types and of waste for the various regions were collected using the n-butanol scale (see Section 3.3.2).

3.3.2 Olfactory Monitoring of Incoming Waste

Olfactory monitoring using odor intensity (based on the n-butanol scale) was conducted on select waste loads immediately downwind at the working face concurrently with the visual observations of the physical composition of the waste. The olfactory monitoring was conducted on the same loads that air samples were collected, as well as some additional loads or areas as time allowed. Results are summarized in Table 3.3.

Table 3.3 Results of Odor Intensity Monitoring

Sample ID	Delivery Method (Region)	Odor Intensity	Peak Odor Intensity
01	Rear Load Truck (362929 - Local)	1.0 – 1.5	Steady
02	Front Load Truck (211394 - Local)	0.5	Steady
03	Biosolids/Sludge (Truck S-119)	1.5 – 2.0*	Steady
04	Rail Container (WMNY9779)	0.5 – 1.0	Steady
05	Rail Container (WMNY10619)	1.0	Steady
06	Long Haul #1 (422/545R - Varick TS)	0.5	Steady
07	Rail Container (WMNY10319)	1.0 – 1.5	Steady
08	Rail Container (USWX9305)	1.0 – 1.5	2.0

Table 3.3 Results of Odor Intensity Monitoring

Sample ID	Delivery Method (Region)	Odor Intensity	Peak Odor Intensity
09	Food Waste (Truck 413405)	1.5 – 2.0	Steady
10	Long Haul #2 (422/30 - Varick TS)	1.5	2.0
11	Rail Container (WMNY10410)	2.0	Steady
12	Rail Container (USWX9531)	1.0	1.5
13	Compost Pile (undisturbed)	0.0 – 0.5	Steady
14	Rail Container (WMNY10999)	2.0	Steady
15	Rail Container (WMNY10337)	1.0 – 1.5	Steady
16	Compost Pile (disturbed)	0.5	1.0
17	Rail Container (WMNY1315)	2.0	2.5
18	Rail Container (WMNY2109)	1.0	Steady
19	Rail Container (WMNY1657)	2.0	2.5
20	Rail Container (WMNY0122)	1.0	Steady

Notes: Odor Intensity is based on n-Butanol scale, ranging from 0 to 8.

* Due to safety concerns related to traffic patterns, odor intensity readings were unable to be taken downwind of the biosolid/sludge, and were instead taken off to the side of the deposited waste. Thus results likely represent a lower odor intensity than those of the other wastes monitored, and it is anticipated that the readings would have been higher if they could have been taken directly downwind. GHD staff noted overall odors in vicinity during delivery of biosolids/sludge were significantly increased from that of general MSW from similar distances.

As previously noted in Section 3.3.1, the majority of the waste delivered consisted of typical residential MSW, and was also noted to be consistent across the various geographic regions. Based on the olfactory monitoring conducted of the waste from the various geographic regions at the working face, no significant differentiation between the typical MSW from the various regions was identified. Odors for the majority of the wastes remained relative steady, though on a couple of occasions a container did exhibit a peak odor intensity immediately following unloading of the waste that was greater than that observed shortly after the waste was deposited and being spread at the working face.

In general, the MSW odor intensities observed during the summer event were greater than those observed during cold weather conditions, however, the increase was not significant. For loads of MSW, the odor intensity of the winter event averaged 0.8 versus 1.3 during the summer event.

Unlike the winter event, odors associated with the compost area and those observed during delivery of food waste were noted as relatively mild in comparison to some of the other wastes during the summer event. However, similar to the winter event, it was noted that some of the most intense odors were associated with delivery of the biosolids to the working face (sewage sludge from the Monroe County Department of Environmental Services (MCDES)).

3.4 Collection of Air Samples

In addition to the visual and olfactory observations of the waste performed as outlined in the previous sections, GHD also performed scans using air monitoring instruments.

3.4.1 Air Monitoring of Transportation Containers

Air monitoring during the summer event was conducted in a similar manner to that during the winter event. The rail containers were unloaded from the rail cars upon arrival at HALRC and staged in an area adjacent to the rail yard. Each container had a hose-barb sample port installed into its side-wall upon arrival to allow for monitoring of the interior of the container while allowing the containers to stay closed until disposal. The rail containers were monitored to determine the presence of potential odorous emissions each day until the waste was disposed of at the working face using the following methods:

- Monitoring outside each container was conducted using a Flame Ionization Detector (FID). The rear door of each container (the side from which waste is unloaded) was monitored with an FID and the readings were logged in a field book. The FID instrument measures total volatile organic compounds (VOCs) and displays the measurement as a concentration value in units of parts per million (ppm). A reading of less than 2 ppm was considered to be "background" and any readings above this background level were recorded. Monitoring conducted included checking the seams/seals of the rail containers, with measurements being taken within 5-10 centimeters of the container, which is in general accordance with EPA Method 21. It should be noted that the top lid of the container could not be monitored due to safety hazards (height of container is approximately 15 feet)
- The inside of each container was monitored using a GEM. The GEM provides readings of methane (CH_4), carbon dioxide (CO_2), oxygen (O_2), balance gas, and static pressure (P). This is the same instrument used to monitor landfill gas in the wellfield at HALRC.

As discussed in the March 15, 2019 *Waste Characterization Study*, while it was originally anticipated that local waste collection vehicles and transfer trailers would be evaluated as part of the study, due to the number of vehicles and heavy equipment at the working face at any particular time, collection of samples and visual observations could not be done in a safe manner.

During the summer evaluation period (June 24, 2019 through July 3, 2019), eight rail cars were evaluated over a period of four days, with an additional four containers from MTS Transfer Station added and evaluated over two additional days. Results are summarized in a series of Tables in Appendix D. In review of the results, the following was noted:

- A total of 78 FID readings were taken around the outside of the rail containers. The majority of the readings collected were similar to those of background (47 out of 78), though some elevated readings were also observed. As previously noted in the March 15, 2019 Waste Characterization Study, the FID measures the concentration of organic compounds, including both methane and total VOCs, and does not differentiate between individual compounds[2].

[2] While an FID is commonly used to measure the concentration of methane, it actually measures the total concentration of all volatile organic (carbon-containing, or volatile organic compounds (VOCs)). In cases where other organic compounds are also present, such as a waste container, the FID readings represent the total concentration of methane and all VOCs. It is anticipated that the higher readings observed during the summer event are due to an increase in the volatilization of the many organic compounds present in the waste due to increased temperature, not necessarily methane alone, based on the higher levels observed in the air sampling collected during the warm weather event.

To put the FID readings into perspective, surface emissions scans over the surface of the landfill are conducted on a quarterly basis using an FID[3]. The USEPA has set a threshold of 500 ppm methane for surface emissions at a landfill, though HALRC has agreed to use a lower limit of 200 ppm methane when conducting surface emission monitoring. Raw landfill gas is approximately 500,000 ppm methane.

These readings represent the concentration of methane (and other VOCs, if present) at the inlet of the instrument. They do not represent the rate of methane and VOCs being emitted from a source. In the case of small leaks, cracks, or fissures around closed containers, FID readings a short distance away from the source (crack, fissure, etc.) are typically significantly less, if detectable at all.

FID readings varied greatly during the summer event (as shown in Appendix D, out of the 78 readings collected, 47 were background, 12 were less than 10 ppm, 7 were between 10 and 100 ppm 7 were between 100 and 400 ppm, and 5 were above 500 ppm). In comparison, the highest reading recorded monitoring the containers during the winter event was 40 ppm.

During the summer event the following rail containers had FID detections above 200 ppm:

- Varick WMNY9779 - readings ranged from 80 to 400 ppm. A small hole was noted in the vicinity of one of the elevated readings.
- Varick WMNY10319 – readings over the two days the container was stored on-site varied from background to 400 ppm. The container was noted to have a noticeable localized odor emanating from it during staging. The container also had waste sticking out between the door and container along right side in the area where the elevated readings were noted.
- Review WMNY10337 – while the majority of readings were background or under 5 ppm, elevated readings of 500 ppm (with a high of 570 ppm) were noted along the right vertical side. A small amount of what appeared to be leaves was caught in the seal along right vertical side where the elevated readings were observed. During second day, some liquid was observed near the bottom of the container, and on third and fourth day, notable localized odor was present.
- MTS Southwest WMNY1657 - initial readings were similar to background, but on the second day of staging, a single elevated reading of 766 ppm was observed. Odor was also noted on the second day of staging.

- A GEM was used to collect a total of 26 methane readings from the interior of the rail containers during staging of the rail containers at HALRC. Methane was detected in all of the containers during the summer event, ranging from 0.2% methane to a high of 5.5% methane in container MTS Hamilton WMNY2109 on July 2, 2019. In contrast, methane was not detected in all of the containers during the winter event. However, the highest methane concentration of 5.5% measured during the summer event was lower than the highest methane concentration of 8.8% observed during the winter event.
- Carbon dioxide, oxygen, and balance gas readings were also collected from the interior of the rail containers using the GEM, and varied significantly between the 26 points monitored. A few

[3] When used in conducting surface emission monitoring at a landfill, the use of an FID to measure methane is appropriate, as fugitive methane from the decomposition of waste is the predominant organic compound present.

readings were somewhat reflective of atmospheric conditions, with oxygen concentrations just under 20%, and carbon dioxide concentrations under 5%, however, the majority had very low oxygen concentrations, and high levels of carbon dioxide. Variability in the concentrations was also observed in the samples collected during the winter event, though there were a higher number of samples that were reflective of atmospheric conditions during the winter event than was observed during the summer event.

- The GEM was used to collect 26 sets of pressure readings from the interior of the containers, and varied from negative to no pressure in 17 of the 26 readings, to a high of 0.02-inches water column. No trends or notable observations related to pressure could be identified from the data collected during the summer event, nor in comparison to the winter event.

3.4.2 Air Samples During Waste Placement

The following air/gas samples were collected as outlined in the December 2018 Work Plan:

- Rail shipping containers
- Potentially odorous loads (based on a review of incoming waste streams)
- Transfer trailers, front-loaders, rear-loaders, compost, special wastes, etc.

Samples were collected using the same methods as during the winter event, which is summarized below:

1. After the waste was unloaded from truck/transfer trailer/rail container, a 2-mil plastic sheet of 9'x12' was placed over the waste pile in an area that was observed to be representative of the waste stream. The plastic sheet was left in place for a minimum of 15-20 minutes to allow emissions to accumulate.
2. A 6-liter silonite can fitted with a 1-hour time-integrated flow controller was placed on top of the plastic sheet. A piece of Teflon tubing was extended from the silonite can to the area underneath the plastic sheet. The canister was opened for sample collection. After sample collection, the canister valve was closed and the can was packaged and labeled for shipment to the laboratory for analysis.

While it is understood that these methods would not necessarily detect all of the potential odor related compounds, as discussed in the March 15, 2019 *Waste Characterization Study*, this method was expected to indicate concentrations of odorous compounds present at detectable limits and determine if these compounds are common to more than one source or if there is a high variability between sources. The intent of collecting air samples from waste was to determine what compounds would be similar to, as well as those that may be different from, landfill gas.

Collected air samples were collected and analyzed for the following parameters:

- Volatile organic compounds (VOCs) via USEPA method TO-15 plus tentatively identified compounds (TICs)
- Reduced sulfur compounds via ASTM method 5504

The collection of the air samples was undertaken concurrently with the olfactory readings using the n-butanol scale (as discussed in Sections 3.1 and 3.3.2).

Temperatures of each load were collected in the field using an AM Probe Infrared Thermometer (IR-712). The IR-712 thermometer has a temperature range of 0°F to 1,022°F. Samples were also collected of representative waste from each load to determine moisture content of the waste. Results of the temperature monitoring and analysis for moisture content are included in the table found in Appendix E.

Results of the air sampling, moisture content and field testing of temperature are summarized in the table in Appendix E. Appendix E also includes a series of summary charts, graphing the results, as well as the laboratory analysis. The following was noted:

- Several of the known odor producing compounds, such as acetone, d-limonene, alpha-pinene, dimethyl sulfide, and dimethyl disulfide were detected above the respective odor threshold in the majority of samples collected.
- Other odor compounds were detected in almost all of the samples collected, however, were at concentrations reported below the respective odor thresholds, including, but not limited to, toluene and ethylbenzene.
- As noted during the winter event, the compost, food waste and biosolids/sludge samples had significantly lower VOC concentrations than the MSW, which would be anticipated.
- Compost (both disturbed and undisturbed) and food waste appeared to have lower concentrations than typical MSW for the majority of the odor compounds sampled, which agrees with the field observations and odor intensity levels noted during the summer event.
- Biosolids had higher concentration than typical MSW of hydrogen sulfide, acetone, and toluene.
- Hydrogen sulfide was detected in only 4 of the 20 samples collected during the summer event. However, all four detections were above the odor threshold level of 0.7 $\mu g/m^3$, with the highest detection being 24 $\mu g/m^3$ from a local rear load truck.
- For several of the odor compounds evaluated, concentrations from the samples collected during warm weather conditions were higher than those seen during cold weather. The increases noted for some of these compounds was five to ten times those measured during the winter event, including for ethanol, d-limonene, dimethyl sulfide, dimethyl disulfide, methyl ethyl ketone, and ethyl acetate. For certain compounds, including ethanol, d-limonene, dimethyl disulfide, methyl ethyl ketone, and ethyl acetate, this increase resulted in a greater number of samples having concentrations above the established odor threshold. It is anticipated that the higher concentrations observed during the warm weather event are due to the increased temperature and thus the increase in volatilization of the organic compounds present in the waste.

GHD graphed twelve different odorous compounds to determine if any particular trends existed between the various loads (See Appendix E). In most cases, some compounds were detected at relatively high concentrations in some waste streams, and very low concentrations in others. In some cases, only a few compounds were detected at a higher concentration (relative to the other samples) in all of the waste streams. As previously indicated during the winter event, this is more likely due to the specific waste sample collected, than indicative of the characteristic of a specific method of transport or region where the waste originated.

It should be noted that these results were from random samples collected from portions of covered waste, at one point in time. They are not emission rates, nor ambient air concentrations, and they do not correlate to potential fence-line concentrations which would be orders of magnitude lower, if present, or detectable at all.

3.5 Ambient H_2S Monitoring Program

As discussed in the March 15, 2019 *Waste Characterization Study*, as part of HALRC's ambient monitoring program five Acrulog hydrogen sulfide (H_2S) monitoring units were installed on March 6, 2018 at the following locations around the perimeter of the facility:

- West Monitoring Station
- North Monitoring Station
- East Monitoring Station
- South Monitoring Station
- Dudley Elementary School Monitoring Station

Figure 3.1 presents the location of each of these stations.

The Acrulog units collect measurements of hydrogen sulfide at a frequency of every 10 minutes at each station.

Bi-weekly reports have been to NYSDEC and Town of Perinton describing the monitoring and the results obtained. Additionally, the March 15, 2019 *Waste Characterization Study* included a summary of the monitoring results from initiation of the monitoring through March 6, 2019. While H_2S has been detected on rare occasions (approximately 0.1% of all readings), there were no occasions when the NYSDEC threshold of 10 ppb as a one-hour average, attributable to the landfill, was exceeded. Table 3.4 provides a summary of all the detections associated with the ambient H_2S monitoring conducted between March 6, 2019 and July 9, 2019.

Table 3.4 Summary of Ambient Monitoring Program –.March 6, 2019 through July 9, 2019

Station Name	# Readings Collected	% Reading Collected (% Potential Total)	# of Detections	% Non-Detections (% of Total Readings)
West Monitoring Station	17,068	94.07	41	99.76
North Monitoring Station	15,687	86.46	2	99.99
East Monitoring Station	17,672	97.40	1	99.99
South Monitoring Station	18,071	99.60	14	99.92
School Monitoring Station	17,700	97.55	71[4]	99.60

[4] During the period of June 26, 2019 through July 9, 2019, there were sixty-four detections at the Dudley School ranging from 3 ppb to 10 ppb. A review of the meteorological data indicated that none of the detections occurred when the wind was blowing from the direction of HALRC, and the majority of detections occurred between 7:30 PM and 10:30 PM, long after the cessation of landfilling activities and when HALRC was closed. An increase in detections at the Dudley School occurred during a similar time period in the summer of 2018. Similar to the June-July 2018 detections, these detections do not appear related to HALRC or landfill activities, and are likely due to other sources in the vicinity commonly known to produce H_2S including wetlands, sanitary sewers, and other potential sources.

Table 3.4 Summary of Ambient Monitoring Program – March 6, 2019 through July 9, 2019

Station Name	# Readings Collected	% Reading Collected (% Potential Total)	# of Detections	% Non-Detections (% of Total Readings)
Grand Totals	**86,198**	**95.02** [5]	**129**	**99.85**

During the field activities portion of the winter evaluation period conducted between December 10, 2018 through December 17, 2018 and January 8, 2019 and January 15, 2019, there was one detection of H_2S at the South Monitoring Station (no detections occurred at the West, North, East or School Monitoring Stations). In comparison, during the field activities portion of the summer evaluation period of June 24, 2019 through July 3, 2019, there were a total of thirty-three (33) detections of H_2S at the North, West and School Monitoring Stations[6] (no detections occurred at the East and South Monitoring Stations). Based on a review of meteorological data, it does not appear these detections were related to HALRC or landfill activities.

Based on the limited number of detections associated with the ambient monitoring program, on April 30, 2019, GHD submitted a Revised Ambient Monitoring Work Plan to the NYSDEC on behalf of HALRC, requesting to reduce the frequency of the H_2S ambient monitoring. The Revised Ambient Monitoring Work Plan was approved by the NYSDEC and Town of Perinton, and as a result, as of July 9, 2019, H_2S monitoring now consists of quarterly monitoring of the four perimeter monitoring stations that coincides with the surface emission monitoring, and monitoring at the Dudley Elementary School Monitoring Station occurs while school is in session.

4. Review of Inspection Reports and Odor Logs

Inspection reports from the NYSDEC during the summer evaluation period from June 24th through July 3rd are included in Appendix F. The following was noted in review of the NYSDEC inspection reports related to odors:

- Inspections during the summer evaluation period were performed almost daily, occurring on June 24th, June 26th, June 27th, July 1st and July 2nd.
- The various on-site odor control systems were in operation throughout the entire evaluation period.
- Slight to moderate garbage related odors were noted on-site by the NYSDEC inspector, periodically on the perimeter access road or near the working face.

GHD also reviewed odor log of complaints received during the summer evaluation period to determine if correlations could be made to activities occurring on-site with off-site odor (see Appendix G for a summary of the odor complaints). As noted in Section 3.1, HALRC has an established investigation protocol for all odor complaints the facility receives (Appendix B). Table 4.1

[5] The *Surface Emission Monitoring and Ambient Monitoring Work Plan*, dated March 2, 2018, specifies a data collection rate of greater than or equal to 90%.

[6] West Monitoring Station - 7 detections, North Monitoring Station - 1 detection, and School Monitoring Station - 25 detections.

outlines the complaints received and the findings of Towpath Investigative Services, the independent, third party that conducts the investigation per the established protocol. A total of nine odor complaints were received during the time period from June 24th to July 3rd. Based on review of field notes, no correlations to on-site activities could be made with the odor complaints received during the summer evaluation period.

Table 4.1 Odor Complaints During Summer Evaluation Period

Date/Time of Compliant	Description of Odor	Wind Direction	Time of Investigation	Investigation Summary with Odor Intensity
6/24 8:21	Garbage	S	8:38	Infrequent puffs every 30 seconds, 0.5
6/24 8:52	Garbage	S	8:46	Infrequent puffs every 30 seconds, 0.5
6/24 8:50	Garbage	S	8:55	Infrequent puffs every 30 seconds, 0.5
6/24 13:27	Garbage	SSE	13:50	Stead odor of garbage, 0.5
6/24 14:02	Garbage	Not Available	Not Available	Not Available
6/26 11:46	Garbage	SW	12:18	Infrequent gusts, 0.5
6/26 11:58	Garbage	SW	12:27	Infrequent gusts, 0.5
6/28 8:14	Garbage	SW	8:31	Steady gusts, 0.5
6/30 15:32	Garbage	NNW	16:04	No odor detected

5. Summary/Conclusions

5.1 Summer Event

In late June and early July, the second and final phase of field testing was conducted as part of the overall waste characterization evaluation at HALRC. Work was performed in accordance with the December 2018 Work Plan previously submitted and approved by the NYSDEC and the Town of Perinton. Previous observations and data were collected during the winter of 2018/2019, as the purpose of the study was to determine if various wastes were more odorous than others and if odors are affected by the mode of transportation, and thus seasonal variation needed to be taken into account.

The following observations were noted during the warm weather phase of the evaluation:

- Based on the visual observations made at the working face, no significant differences were identified related to waste composition from the various incoming MSW waste streams based on the geographic region of origin, mode of transportation, or whether or not the waste was routed through a transfer station.

- Similar to the previous cold weather evaluation, during the summer observation period, there was no discernable difference in the odor intensity of MSW waste streams based on the geographic region of origin, mode of transportation, or use of a transfer station. Certain waste streams were noted to generate odors of a much higher intensity than MSW. These include biosolids/sewage sludge and those associated with composting operations.
- While variability in the temperature data collected from the various locations and modes of transportation were noted, a fairly clear difference was noted in temperature profiles of transfer trailers and rail containers during the summer event. Based on the data collected, the temperature increases observed during the summer event followed distinct patterns based on the mode of transportation utilized. However, the general temperature increase was less than one may have anticipated, and based on the subsequent odor intensity monitoring conducted, the variation in temperature profiles did not appear to have an impact on the overall odor observed.
- A review of the results of the chemical analysis did not indicate a common odor causing compound or waste stream as containing particularly odorous compounds, which is similar to what was noted during the previous sampling conducted. It was noted that the results from the sampling done during warm weather conditions yielded concentrations notably higher than those collected under cold weather conditions, with several more samples exceeding the established odor threshold for various compounds at the working face, where the sampling was conducted. However, the results were still variable, and likely indicative of the composition of the individual sample, rather than the region of which the waste was generated, waste age, or mode of transport.

5.2 Overall Evaluation

In late June and early July, the second phase of field testing was conducted as part of the evaluation initiated back in December 2018. Field work was performed in accordance with the December 2018 Work Plan previously submitted and approved by the NYSDEC and the Town of Perinton, which outlined the overall objectives for the evaluation. The purpose of the study was to determine if wastes from certain regions are more odorous than others and if the mode of transportation to HALRC has an effect on the odor. The evaluation thus included the collection of data and field observations to satisfy the following objectives, which included collecting data during both cold weather and warm weather conditions to factor in seasonal variation related to odor:

1. Evaluate municipal solid waste (MSW) sources, characteristics, and their relationships to odor generation prior to incorporation into an MSW landfill.
    - This included a review of incoming waste data at HALRC, regional waste generation data for the various geographic regions, and a literature review. Incoming waste data for both the cold and warm weather evaluation periods was also reviewed to confirm similarity with historic data.
    - Field observations related to the type of waste and associated odor generation based on the various delivery methods and geographic region of origin were also completed during both phases of the evaluation.

2. Evaluate conditions, including odor generation, of MSW being delivered to the HALRC from various sources and modes of transportation.
   - Similar to the first objective, this included visual and olfactory observations as well as air sampling based on waste type, delivery method, and geographic region, which were completed during both phases of the evaluation.
3. Evaluate handling, transportation and storage operations and potential effect on odor generation.
   - This included reviewing incoming waste data, regional data regarding waste generation, and a literature review on potential odor generation of waste based on storage and transport methods.
4. Evaluate odors from MSW prior to incorporation into the landfill from various locations and modes of transportation.
   - This included a literature review on odor generation of waste prior to disposal, reviewing incoming waste data, and regional data regarding waste generation. Additional visual and olfactory observations as well as air sampling based on waste type, delivery method, and geographic region was completed as part of both phases of the evaluation.
5. Evaluate odors at the working face:
   - Stripping of daily cover
   - MSW odor from local vs. long haul vs. rail
     - Visual and olfactory observations during the stripping of daily cover were conducted, and included observations of an alternative cover material.
     - Visual and olfactory observations, air monitoring, and air sampling of different waste types and methods of transport was also conducted during both phases of the evaluation.
6. Conduct a field study to identify "typical" waste streams from various sources.
   - This included a review of incoming waste data, as well as regional data regarding waste generation. In addition, visual observations related to incoming waste was conducted during both phases of the evaluation.
7. Collect air samples at the working face associated with MSW from various sources and modes of transportation to evaluate the presence of compounds associated with odors.
   - Air samples were collected from different waste types, geographic regions, and methods of transport during both phases of the evaluation.
8. Conduct bench scale testing of a nitrogen purge on the generation of methane from containers.
   - This included collecting samples and conducting a bench scale test, which was completed as part of the initial phase of the evaluation.
9. Research methods for recording temperature in shipping containers.
   - Research was completed ahead of the initial phase of the evaluation, with the same methods used during both phases of the evaluation.

With the completion of the evaluation, the following observations were made and trends noted:

- Based on the waste characterization information reviewed and visual observations made at the working face, no significant differences were identified related to waste composition from the various incoming MSW waste streams based on the geographic region of origin, mode of transportation, or whether or not the waste was routed through a transfer station.
- Due to the different collection timeframes, the age of residential MSW waste upon arrival at HALRC is not markedly different based on the geographic region of origin or mode of transportation. This is based on review of collection frequencies, transportation time frames, and transfer station operating requirements in NYC versus those of other parts of New York.
- Based on the data collected and field observations made during both cold weather and warm weather conditions, there was no discernable difference in the odor intensity of MSW waste streams based on the geographic region of origin, mode of transportation, or use of a transfer station.
    - There are isolated incoming waste loads that may periodically present an increased odor intensity, but the relative odor intensity is based more on the individual waste contained within the load than the geographic region of origin or mode of transportation utilized.
    - There are also certain waste streams at HALRC that generate odors of a higher intensity than typical MSW, the most notable being biosolids/sewage sludge from the MCDES.
    - Some waste streams, such as food waste and the overall composting operations, appear to have variable odor intensity dependent on a seasonal basis.
- During the warm weather data collection period, a fairly clear difference was noted in the temperature profiles of transfer trailers and rail containers. The waste in the transfer trailers was much more subject to the overall ambient air temperature, whereas the waste in the rail containers gradually increased over time. This is contrasted with the data collected during the winter data collection period, that while showing there was some variability in the temperature data collected from the various locations during the winter data collection period, no real trends indicating a temperature increase during transport were identified. While the difference between the seasons is notable, based on the subsequent odor intensity monitoring conducted, the variation in temperature profiles does not appear to have a significant impact on the overall odor intensities observed during this study period.
- While the concentrations of common odor causing compounds were notably higher during the warm weather conditions than those observed during cold weather conditions, a review of the results of the chemical analysis did not indicate a common odor causing compound or waste stream as containing particularly odorous compounds. The results were variable, and likely indicative of the composition of the individual waste streams associated with the individual samples, rather than the region of which the waste was generated, or mode of transport.
- The EPI cover system performed well during the initial trial period conducted, which was on-going during the winter observation period. This alternative cover system has continued to assist HALRC operations staff with odor control at the working face as it eliminates the need for cover stripping in the morning. HALRC requested and received approval from the NYSDEC to continue use of the material, and its use has been incorporated as part of normal operations.

The purpose of the evaluation was to determine if particular incoming wastes are more odorous than others, especially as it relates to the geographic region of origin and mode of transport to HALRC. Based on the research conducted, sampling performed and field observations over the course of the evaluation, GHD found little difference overall in the composition of the typical MSW delivered to HALRC when compared by either geographic region of origin or method of delivery to the facility.

GHD also noted that some waste streams do exhibit an increase in odor over others, however, the increased odor is likely more indicative of the actual composition of the incoming individual waste streams, rather than the region from which the waste was generated, or mode of transport to the site. For instance, the highest odor intensities observed were associated with the biosolid/sludge generated at the MCDES and not MSW. Additionally, individual materials within discrete MSW loads could also have an impact as to the overall odor associated with a specific load, which is believed to account for the variety in odor observed in loads of what appears to be typical MSW. Specific testing as to the source of odor within the general MSW waste stream was not conducted as is considered outside the purview of this evaluation.

Over the past eighteen months, WMNY and HALRC have undertaken a number of corrective measures to assist with managing odors at the facility. With the infrastructure additions and operational changes HALRC has implemented, the previously experienced odor issues are being managed, with the number of odor complaints having dropped off, returning to levels similar to those seen prior to 2017. GHD recommends HALRC continue to utilize the measures and operational practices that have been put in place to continue managing potential odors from facility operations, which includes continuing to monitor for materials that can create odors and ensuring proper controls are in-place to manage odor effectively.

With the submittal of this report, HALRC concludes the work outlined in the December 2018 Work Plan and has completed the facility's response to the October 5, 2018 letter from NYSDEC.

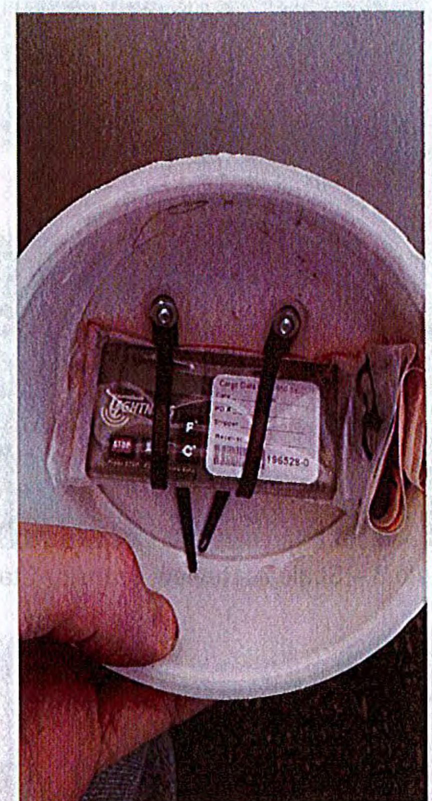


Photo 1 – Cargo Data Logger Unit Installed Within PVC Cap

Photo 2 – Front of Cargo Data Logger Unit Prior to Operation

Site Photographs

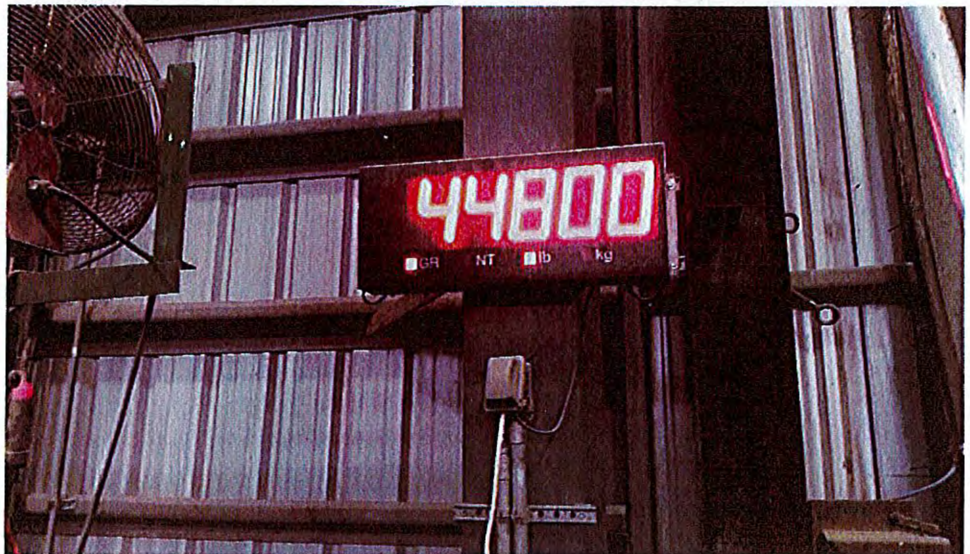


Photo 3 – Scale at Review Transfer Station

Photo 4 – Front View of Rail Container WMNY 10337 at Review Transfer Station

Site Photographs

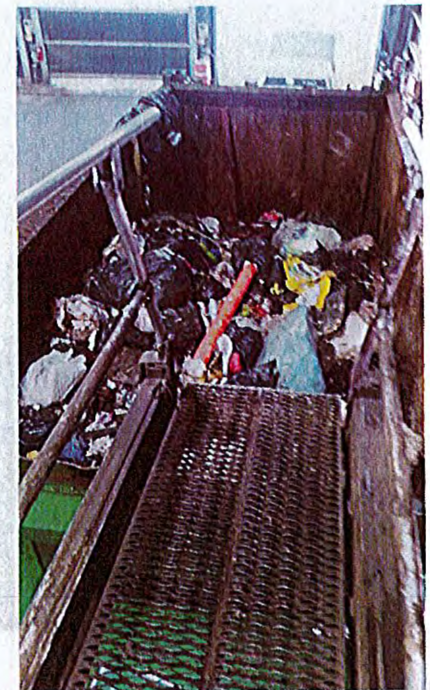


Photo 5 – Temperature Probe Being Loaded Into Rail Container at Review Transfer Station

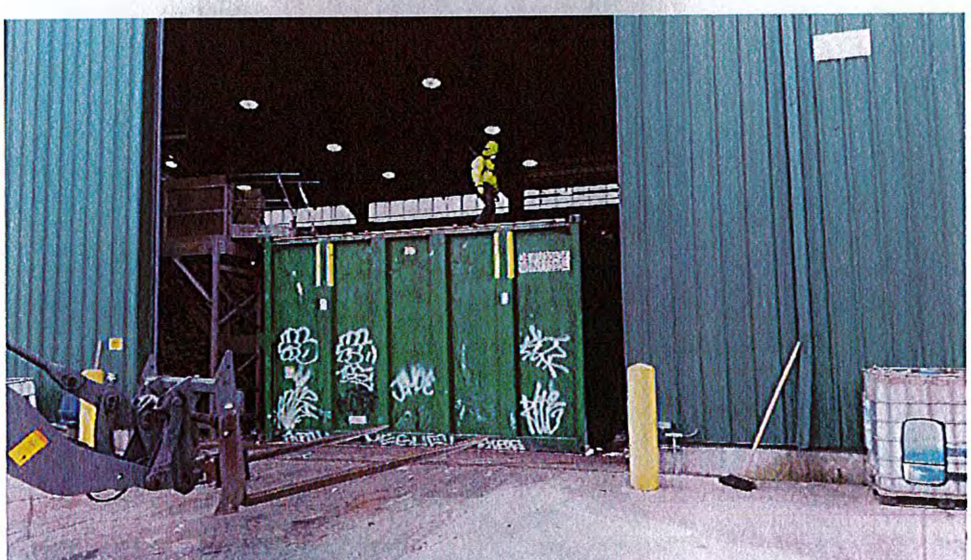


Photo 6 – Rail Container Being Transported From Review Transfer Station to Rail Yard

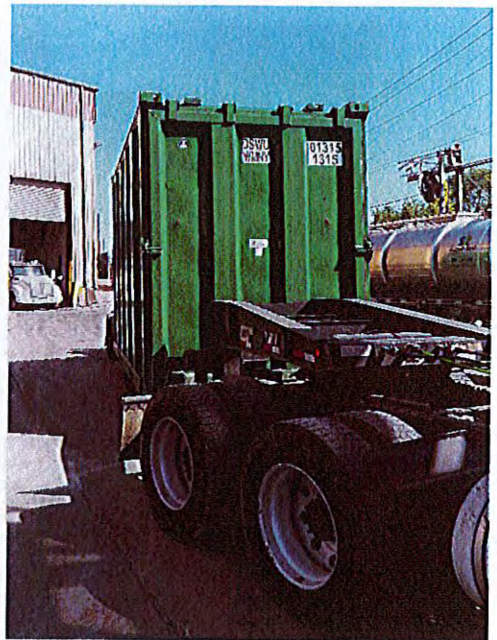


Photo 7 – Rail Container Being Transported to Rail Yard

Photo 8 – Temperature Probe Placed in Center of Rail Container WMNY 10337

Photo 9 – Temperature Probe Placed inside of Rail Container USWX 9531

Photo 10 – Rail Containers Placed Onto Rail Yard at Review Transfer Station

Site Photographs

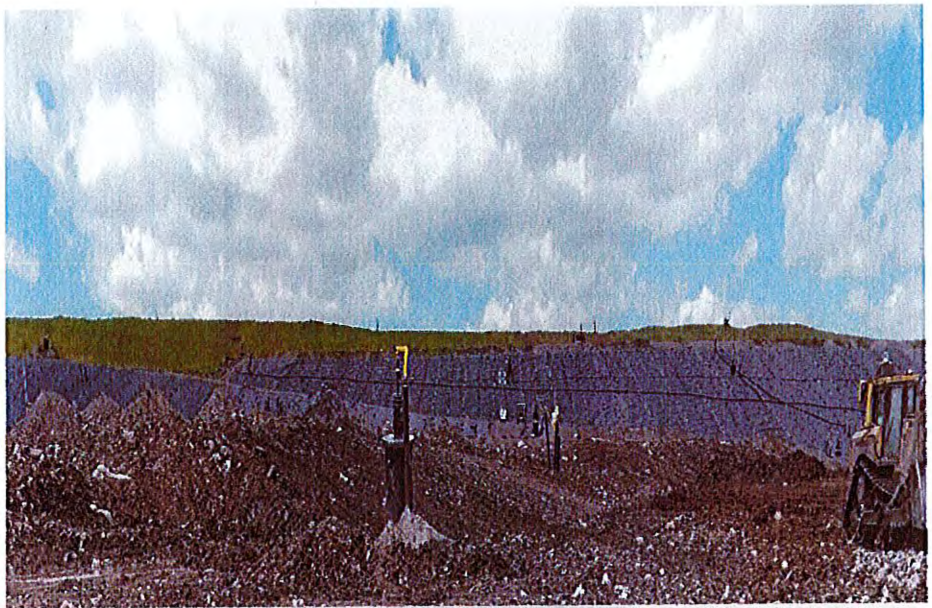


Photo 11 – Trucks / Equipment Applying Cover Soil at Active Region of Cell 12 (Looking West)

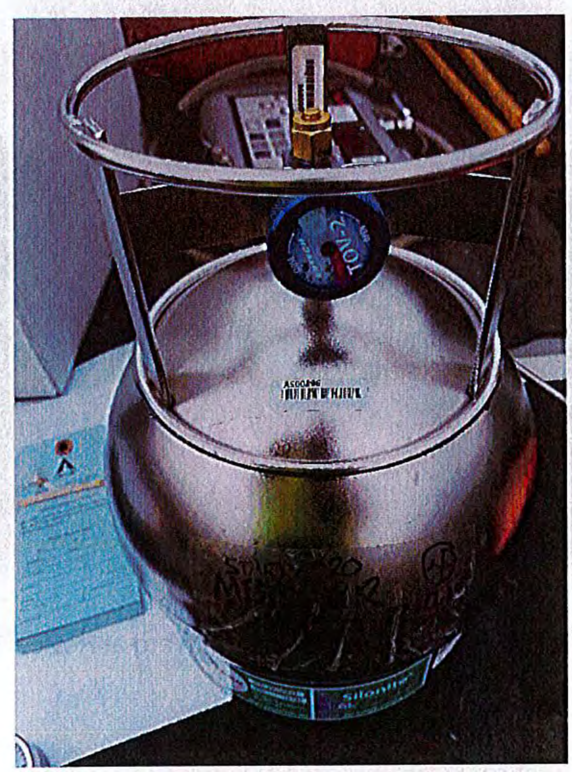


Photo 12 – SUMMA Canister used for collecting samples

Site Photographs

Photo 13 – Rail Container Being Transported to Active Region of Cell 12 to be Unloaded

Photo 14 – Rail Container Being Unloaded in Active Region of Cell 12

Site Photographs

Photo 15 – Pile of Waste after Being Unloaded From Rail Container

Photo 16 – Equipment Used to Spread Out Waste Pile Prior to Cover Soil

Site Photographs

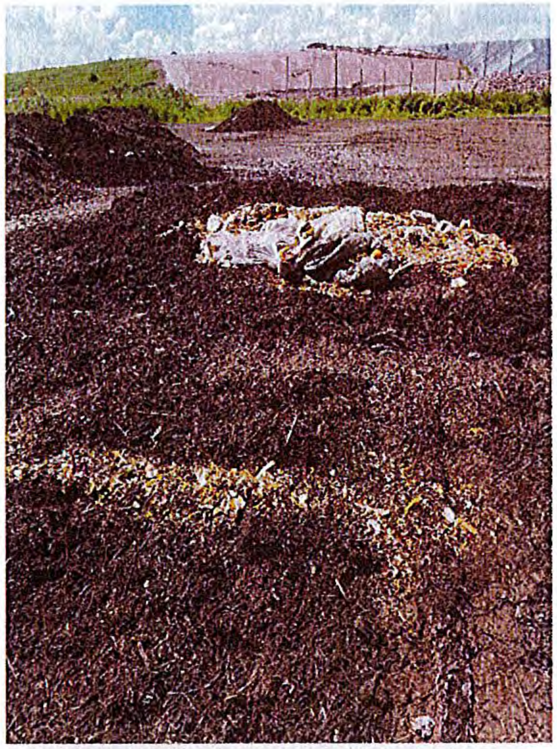


Photo 17 – Food Waste / Compost Area (Looking West)

Photo 18 – Compost Windrow

Site Photographs

Photo 19 – WM Local Rear Loader ready to be unloaded on high plateau edge near south slope

Photo 20 – WM Local Rear Loader being unloaded on high plateau edge near south slope

Photo 21 – WM Rear Loader Waste Pile

Photo 22 – Equipment used to spread WM Rear Loader Waste Pile

Site Photographs

Photo 23 – Silonite Can Setup – WM Local Rear Loader Waste Pile

Photo 24 – WM Local Front Loader ready to be unloaded on near south slope of Cell 12

Photo 25 – WM Local Front Loader being unloaded near south slope of Cell 12

Photo 26 – WM Local Front Loader Waste Pile

Photo 27 – Equipment used to spread WM Local Front Loader Waste Pile

Photo 28 – Silonite Can Setup – WM Local Front Loader Waste Pile

Site Photographs

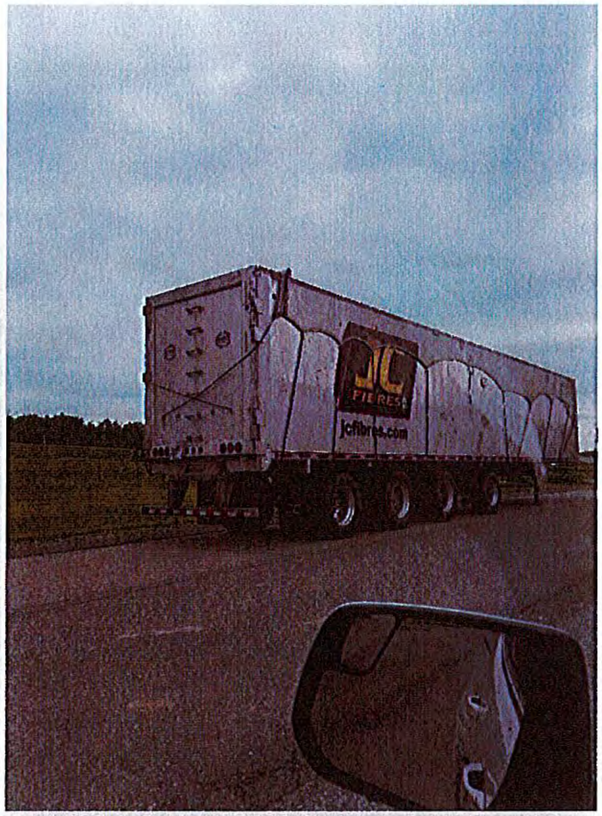


Photo 29 – Long Haul #1 Staged on June 24, 2019

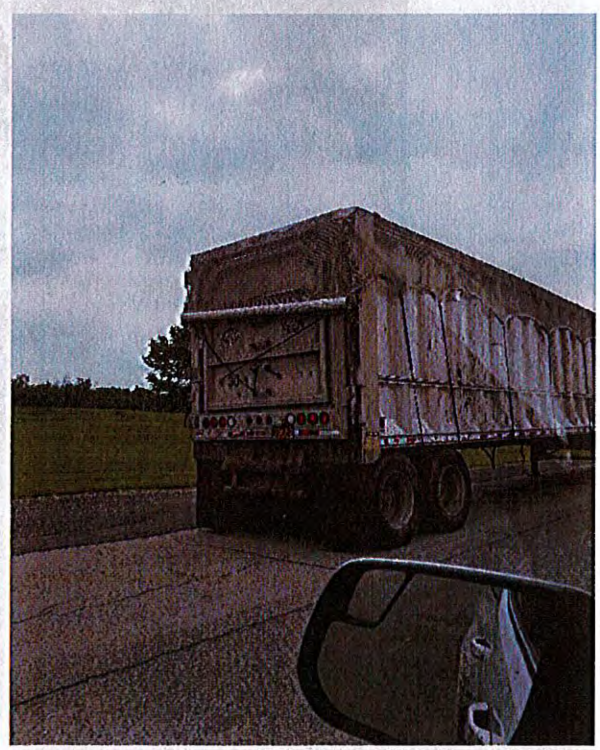


Photo 30 – Long Haul #2 Staged on June 24, 2019

Site Photographs

Photo 31 – Bio-Solids ready to be unloaded in active area of Cell 12

Photo 32 – Bio-Solids being unloaded in active area of Cell 12

Site Photographs

Photo 33 – Bio-Solids Pile in active area of Cell 12

Photo 34 – Silonite Can Setup – Bio-Solids Pile

Photo 35 – TVA-1000 Unit Used for Rail Container Gas Monitoring

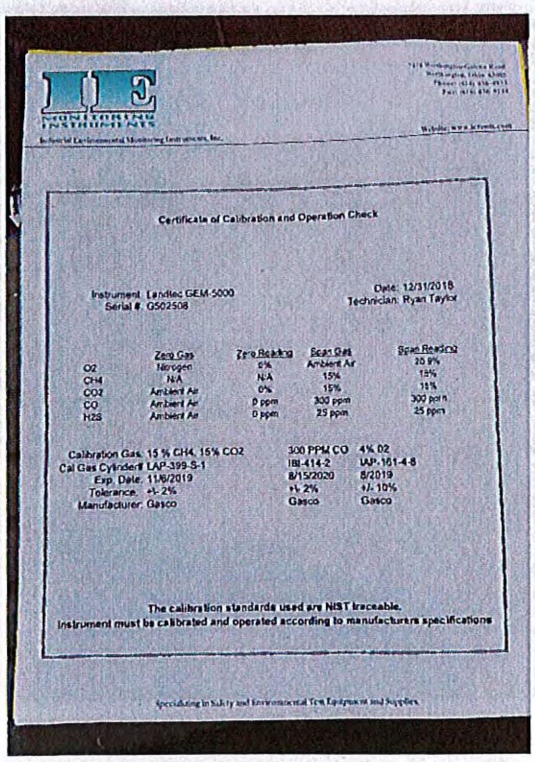


Photo 36 – IE Calibration Certificate for Landtec GEM-5000 Unit

GHD

Site Photographs

Photo 37 – Landtec GEM-5000 Unit used for Rail Container Gas Monitoring

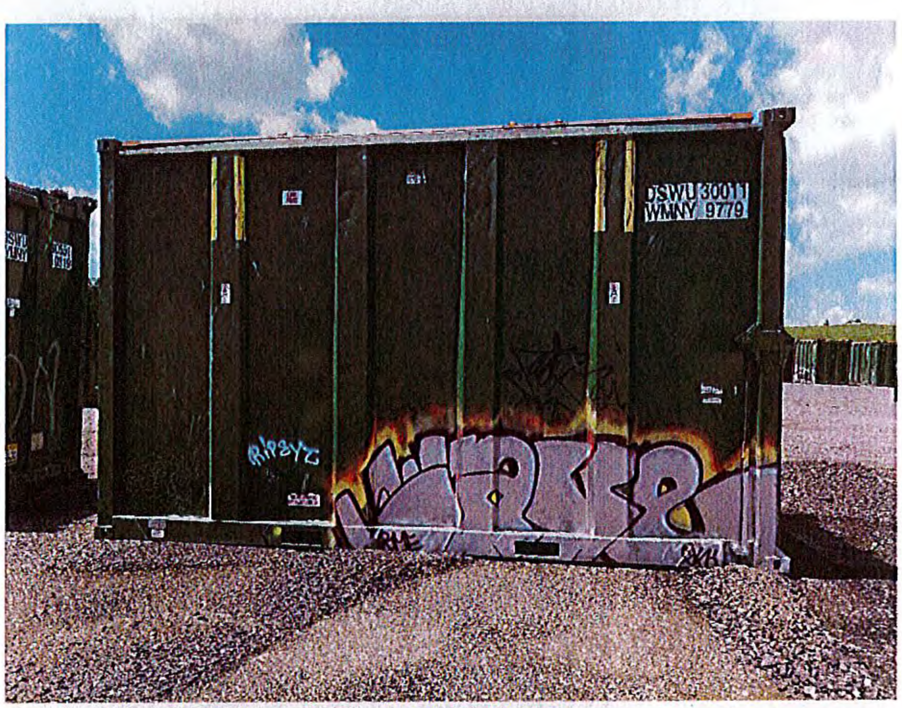


Photo 38 – Varick Rail Container WMNY #9779 in Staging Area – Day 1

Site Photographs

Photo 39 – Varick Rail Container WMNY #9779 –Leaking from bottom right corner of door

Photo 40 – Varick Rail Container WMNY #9779 being hoisted onto transport vehicle

Site Photographs

Photo 41 – Varick Rail Container WMNY #9779 ready to be unloaded near active area of Cell 12

Photo 42 – Varick Rail Container WMNY #9779 being unloaded near active area of Cell 12

Site Photographs

Photo 43 – Retrieval of Temperature Probe from a Varick Rail Container

Photo 44 – Varick Rail Container WMNY #9779 Waste Pile

Site Photographs

Photo 45 – Sampling Setup – Varick Container #9779 Waste Pile

Photo 46 – Review Rail Container WMNY #10619 in Staging Area – Day 1

Site Photographs

Photo 47 – Damage to Review Rail Container WMNY #10619

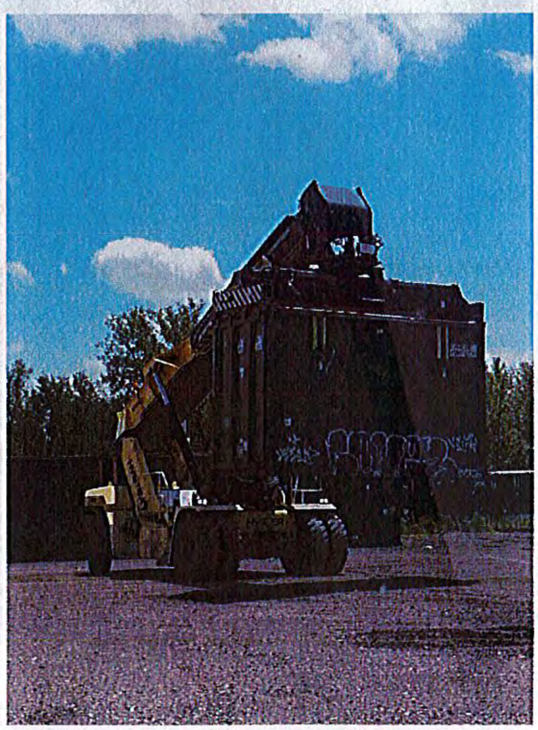


Photo 48 – Review Rail Container WMNY #10619 being hoisted onto transport vehicle

Site Photographs

Photo 49 – Review Rail Container WMNY #10619 ready to be unloaded in Cell 12

Photo 50 – Review Rail Container WMNY #10619 being unloaded in Cell 12

Site Photographs

Photo 51 – Review Rail Container WMNY #10619 Waste Pile

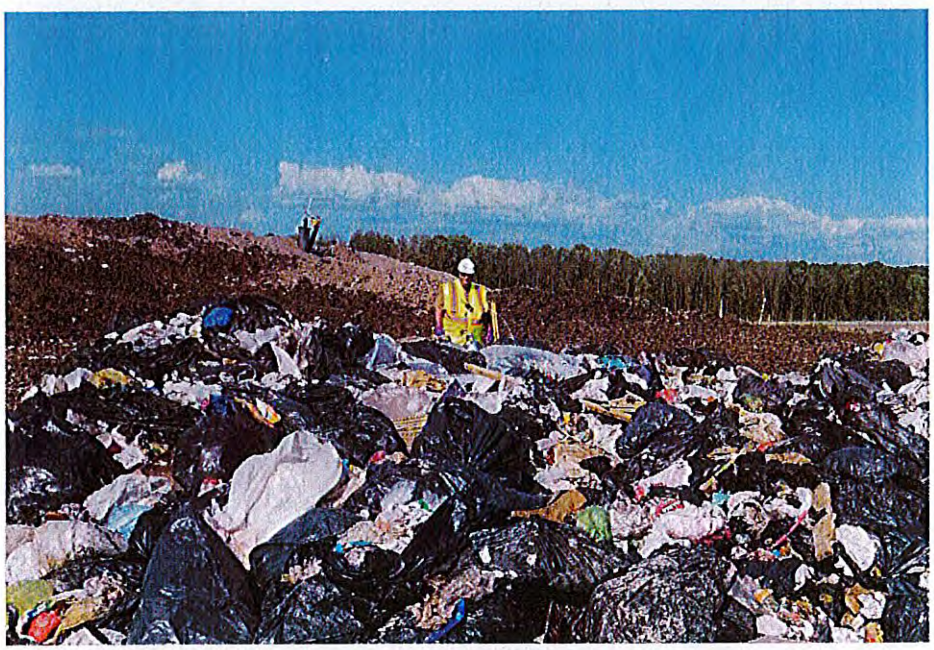


Photo 52 – Sampling Setup – Review Rail Container #10619 Waste Pile

Site Photographs

Photo 53 – Varick Long Haul #1 ready to be unloaded near south slope of Cell 12

Photo 54 – Varick Long Haul #1 being unloaded near south slope of Cell 12

Site Photographs

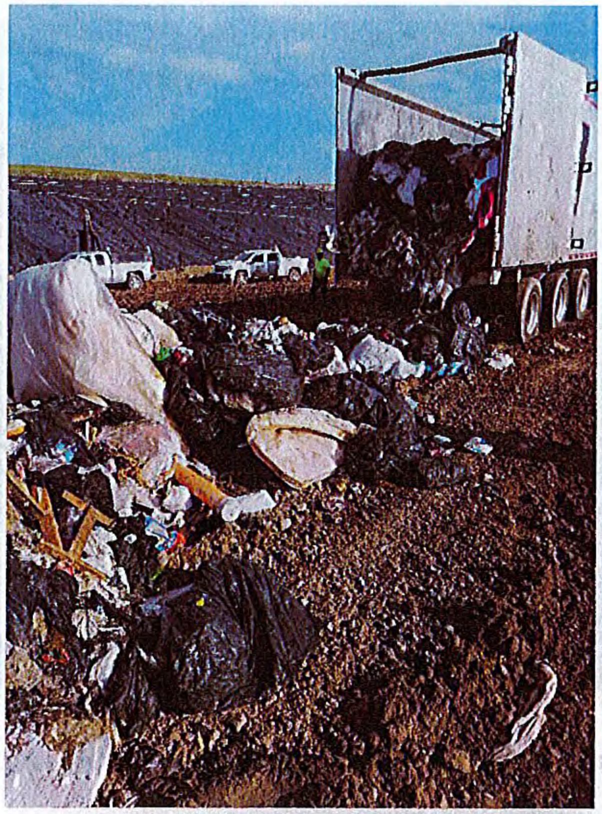


Photo 55 – Retrieval of Temperature Probe from Varick Long Haul #1

Photo 56 – Varick Long Haul #1 Waste Piles

Site Photographs

Photo 57 – Sampling Setup – Varick Long Haul #1 Waste Pile

Photo 58 – Varick Rail Container WMNY #10319 in Staging Area – Day 2

Photo 59 – Varick Rail Container WMNY #10319 being hoisted onto transport vehicle

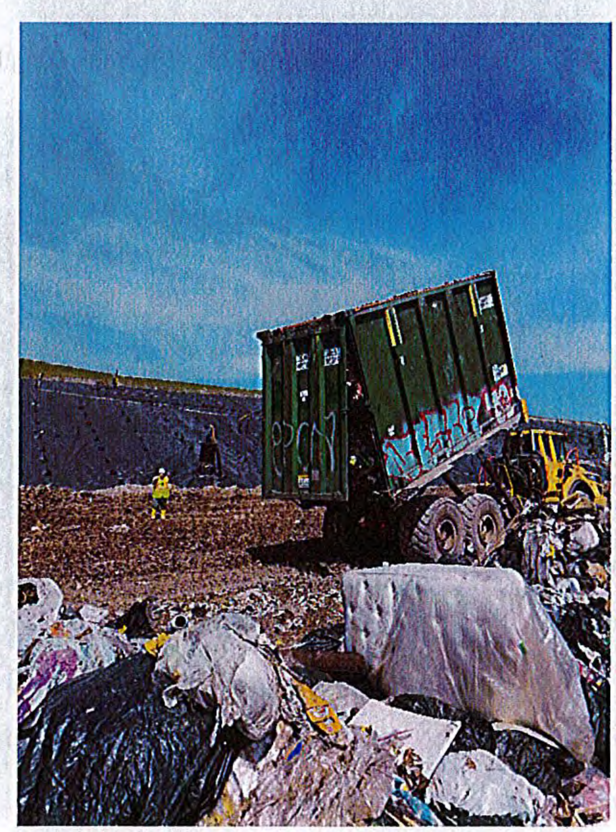


Photo 60 – Varick Rail Container WMNY #10319 ready to be unloaded in Cell 12

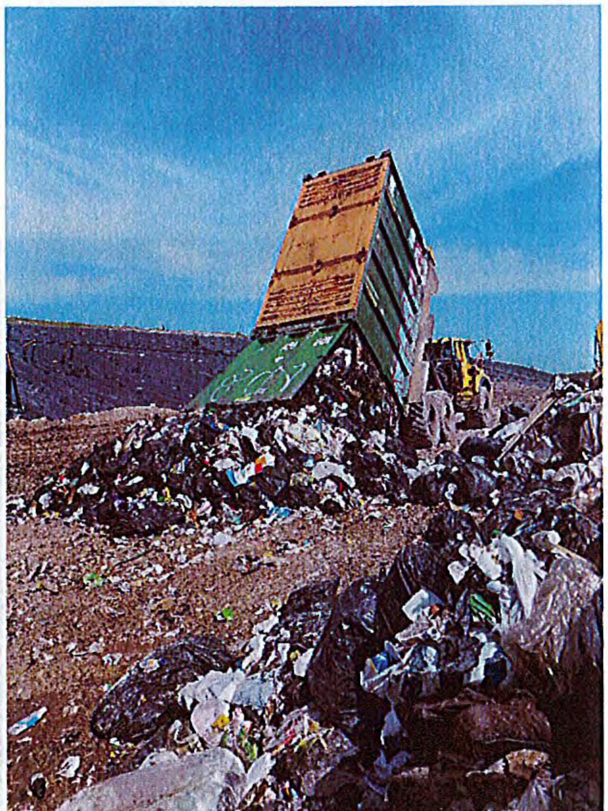


Photo 61 – Varick Rail Container WMNY #10319 being unloaded in Cell 12

Photo 62 – Varick Rail Container WMNY #10319 Waste Pile

Site Photographs

Photo 63 – Sampling Setup – Varick Rail Container #10319 Waste Pile

Photo 64 – Review Rail Container USWX #9305 in Staging Area – Day 2

Site Photographs

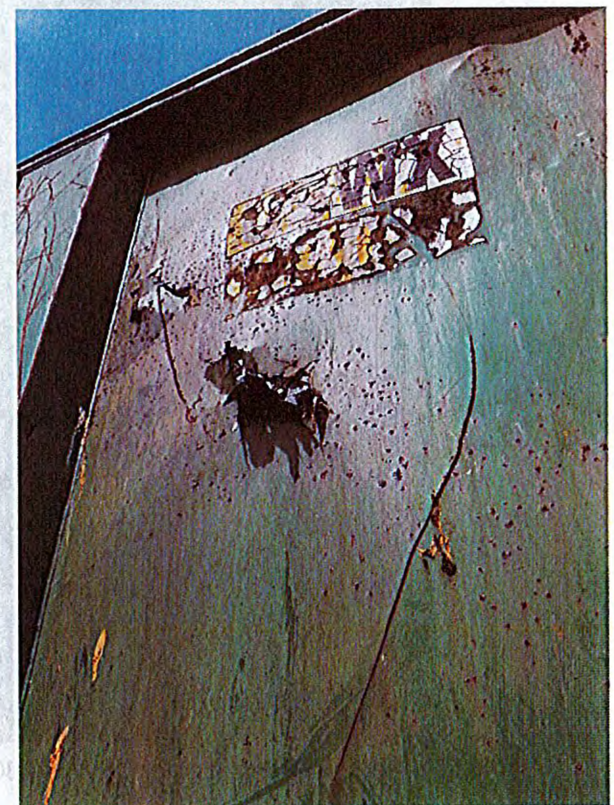


Photo 65 – Damage to Review Rail Container USWX #9305

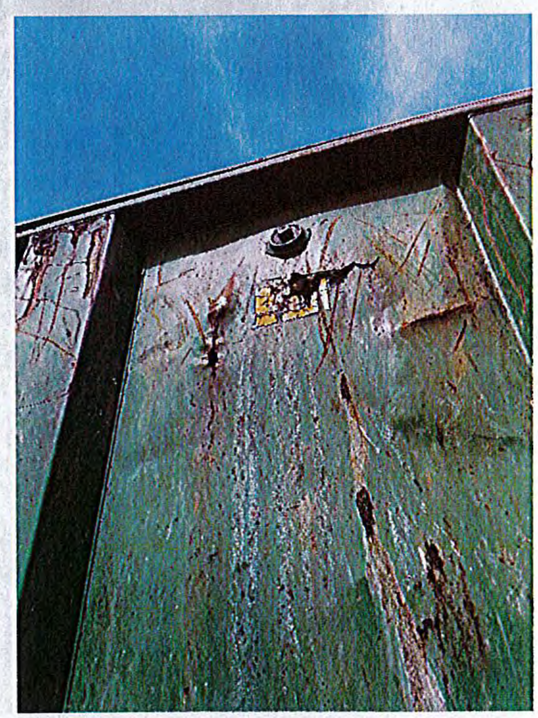


Photo 66 – Damage to Review Rail Container USWX #9305

Site Photographs

Photo 67 – Review Rail Container USWX #9305 – Left Side of Door

Photo 68 – Review Rail Container USWX #9305 – Right Side of Door

Site Photographs

Photo 69 – Review Rail Container USWX #9305 ready to be unloaded in Cell 12

Photo 70 – Review Rail Container USWX #9305 being unloaded in Cell 12

Site Photographs

Photo 71 – Sampling Setup – Review Rail Container USWX #9305 Waste Pile

Photo 72 – Review Rail Container USWX #9305 Waste Pile

Photo 73 – Organics and Food Waste Pile

Photo 74 – Organics and Food Waste Pile

Site Photographs

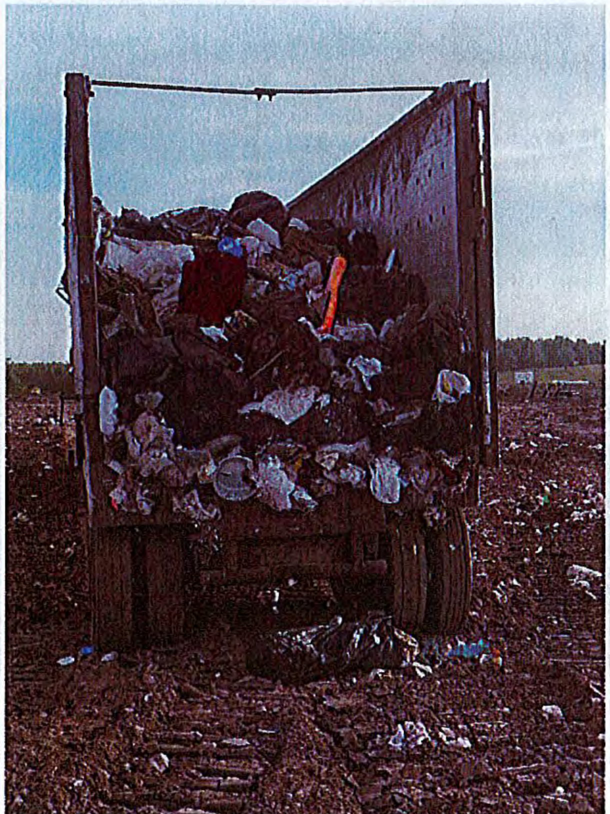


Photo 75 – Varick Long Haul #2 ready to be unloaded near south slope of Cell 12

Photo 76 – Varick Long Haul #2 being unloaded near south slope of Cell 12

Site Photographs

Photo 77 – Varick Long Haul #1 Waste Piles

Photo 78 – Sampling Setup – Varick Long Haul #2 Waste Pile

Site Photographs

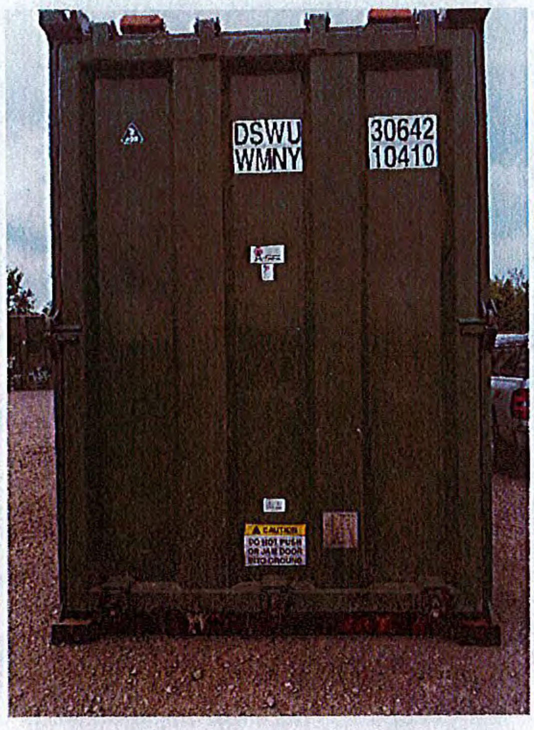


Photo 79 – Varick Rail Container WMNY #10410 in Staging Area – Day 3

Photo 80 – Varick Rail Container WMNY #10410 - Bottom Left Door

Photo 81 – Varick Rail Container WMNY #10410 - Bottom Right Door

Photo 82 – Varick Rail Container WMNY #10410 ready to be unloaded in Cell 12

Site Photographs

Photo 83 – Varick Rail Container WMNY #10410 being unloaded in Cell 12

Photo 84 – Varick Rail Container WMNY #10410 Waste Pile

Site Photographs

Photo 85 – Sampling Setup – Varick Rail Container #10410 Waste Pile

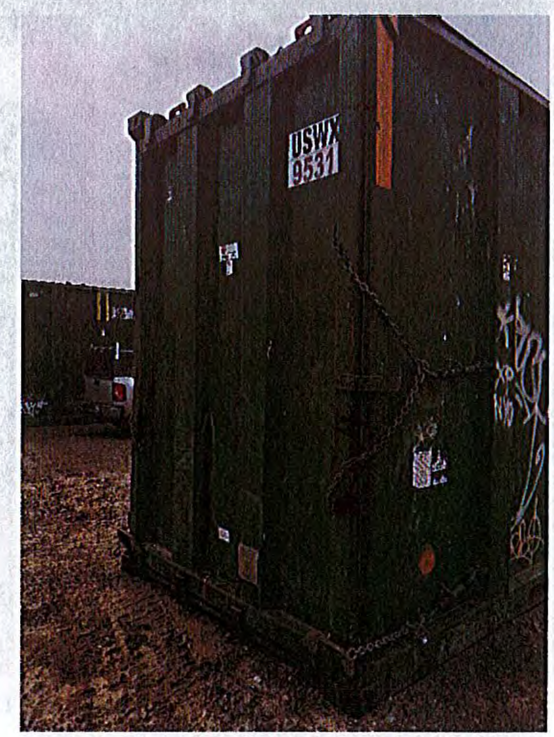


Photo 86 – Review Rail Container USWX #9531 in Staging Area – Day 3

Site Photographs


Photo 87 – Review Rail Container USWX #9531 – Bottom Right Side of Door


Photo 88 – Review Rail Container USWX #9531 – Bottom Left Side of Door

Site Photographs

Photo 89 – Review Rail Container USWX #9531 being unloaded in Cell 12

Photo 90 – Sampling Setup – Review Rail Container USWX #9531 Waste Pile

Site Photographs

Photo 91 – Review Rail Container USWX #9531 Waste Pile

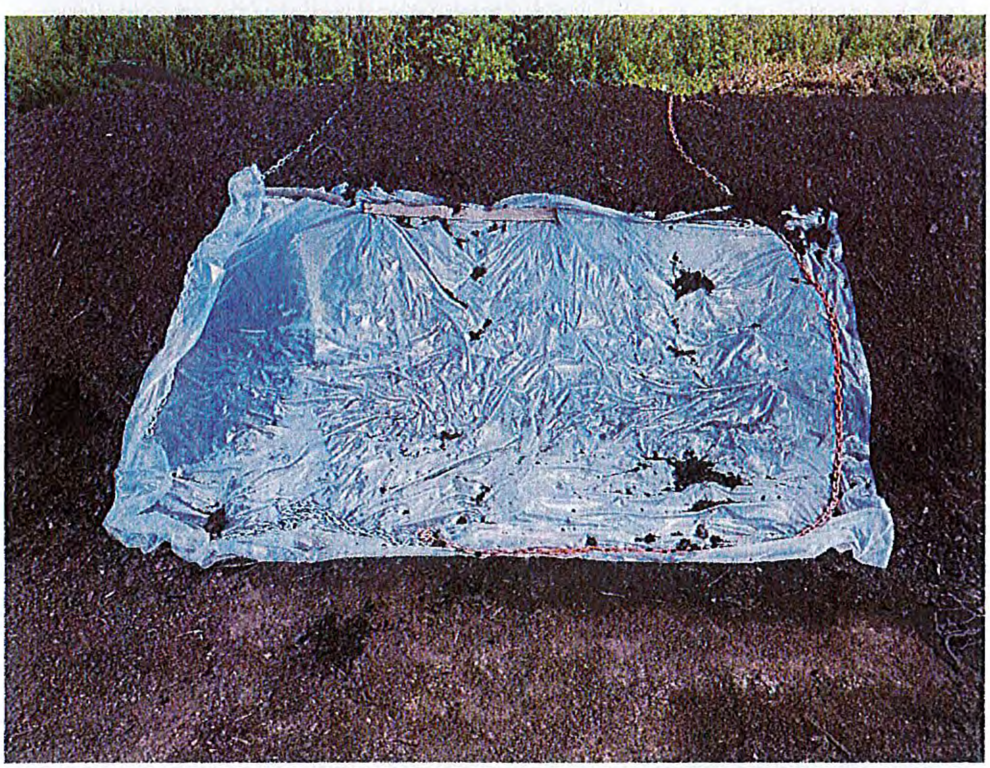


Photo 92 – Compost Windrow (Undisturbed) Sampling Setup

Site Photographs

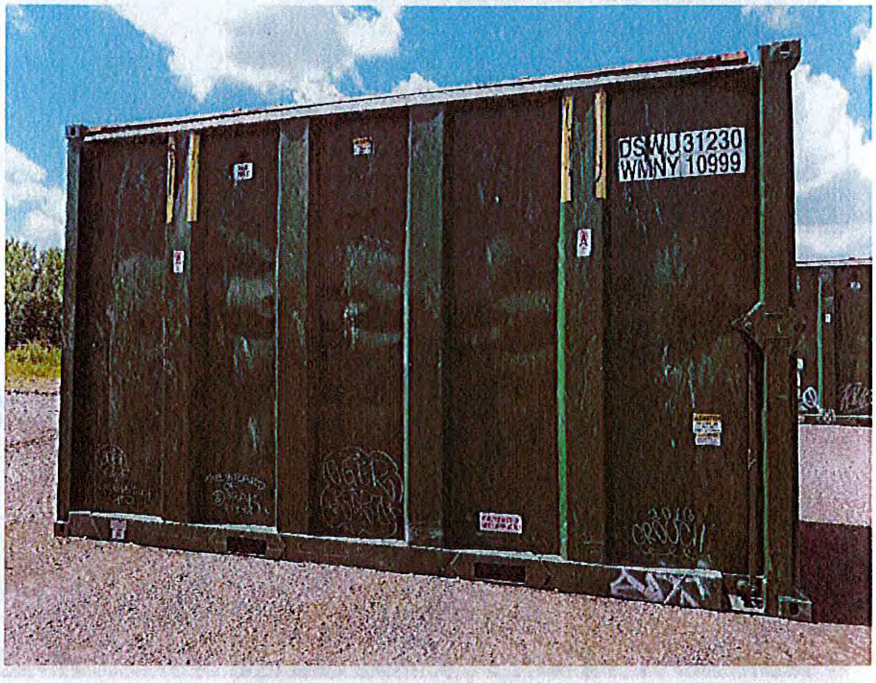


Photo 93 – Varick Rail Container WMNY #10999 in Staging Area – Day 4

Photo 94 – Varick Rail Container WMNY #10999 being hoisted onto transport vehicle

Photo 95 – Varick Rail Container WMNY #10999 ready to be unloaded in Cell 12

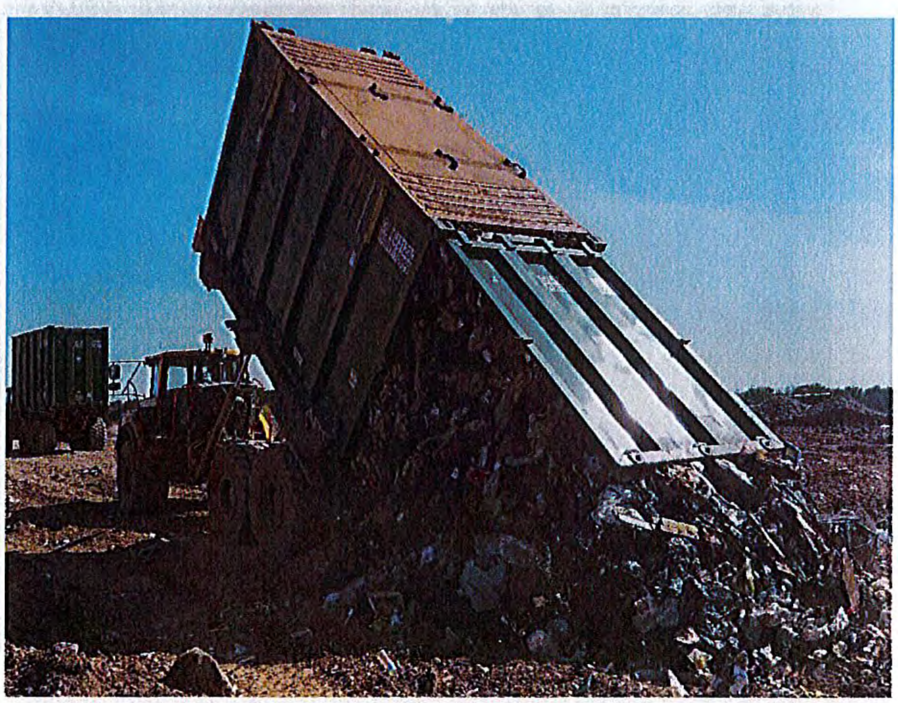


Photo 96 – Varick Rail Container WMNY #10999 being unloaded in Cell 12

Site Photographs

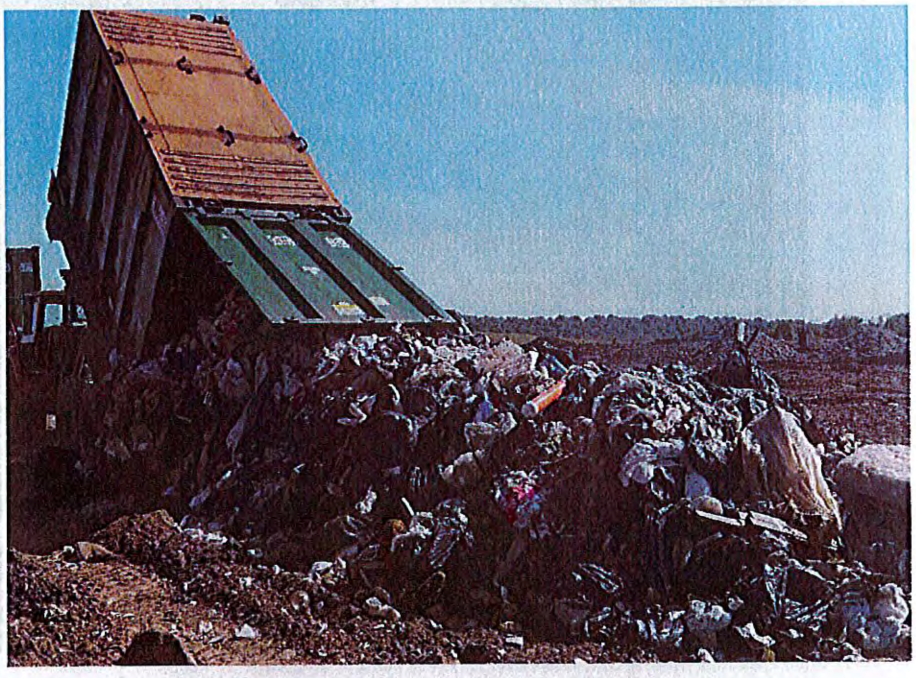


Photo 97 – Retrieving Temperature Probe from Varick Rail Container WMNY #10999

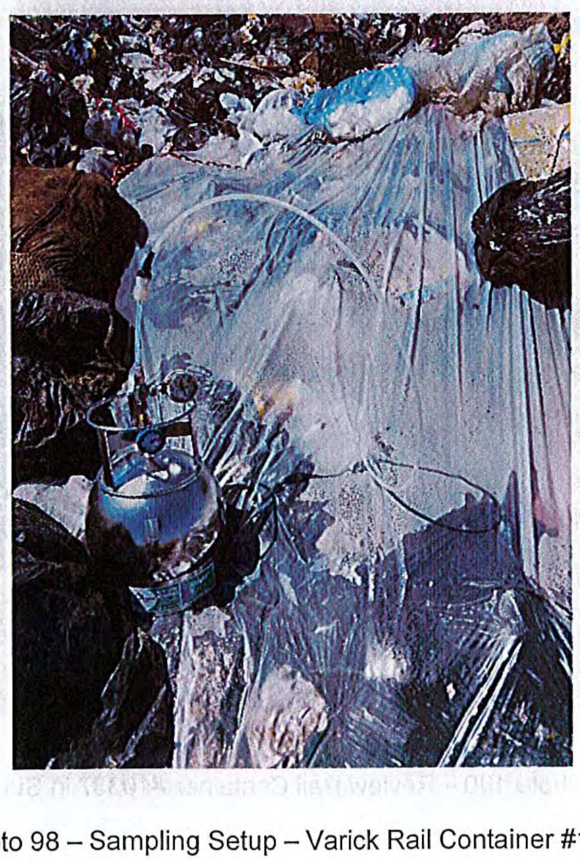


Photo 98 – Sampling Setup – Varick Rail Container #10999 Waste Pile

Site Photographs

Photo 99 – Varick Rail Container #10999 Waste Pile

Photo 100 – Review Rail Container #10337 in Staging Area – Day 4

Site Photographs

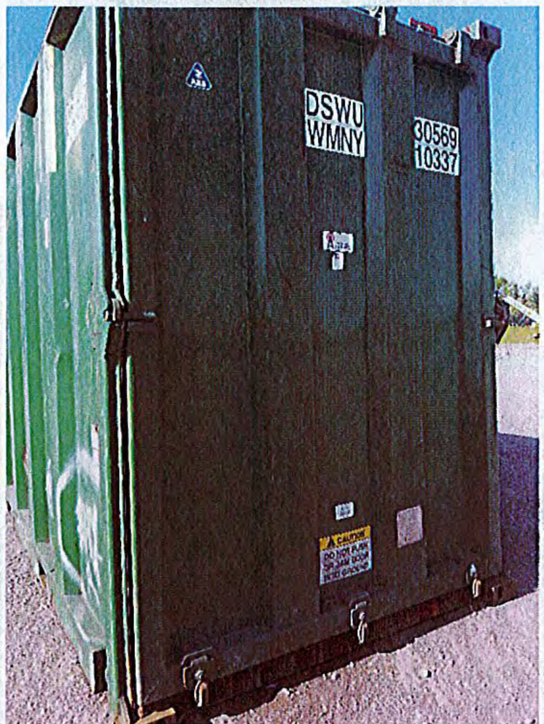


Photo 101 – Review Rail Container #10337 in Staging Area – Day 4

Photo 102 – Review Rail Container #10337 – bottom of door

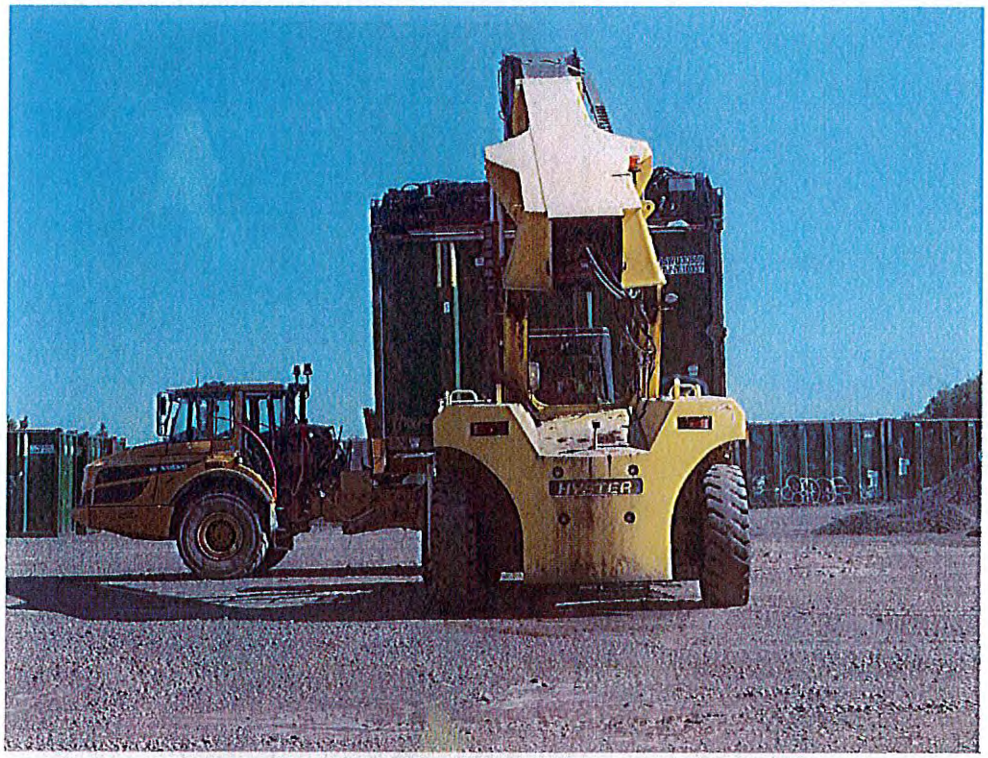


Photo 103 – Review Rail Container WMNY #10337 being hoisted onto transport vehicle

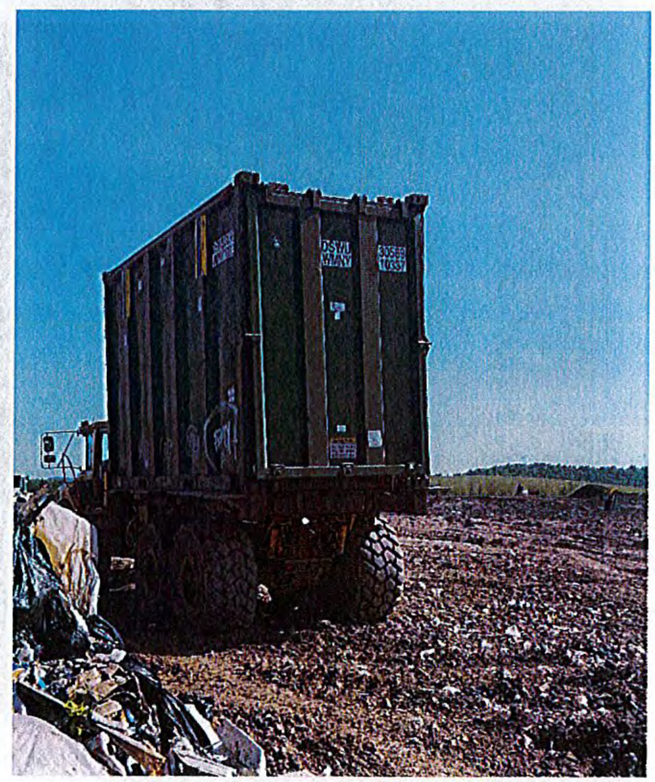


Photo 104 – Review Rail Container WMNY #10337 ready to be unloaded in Cell 12

Site Photographs

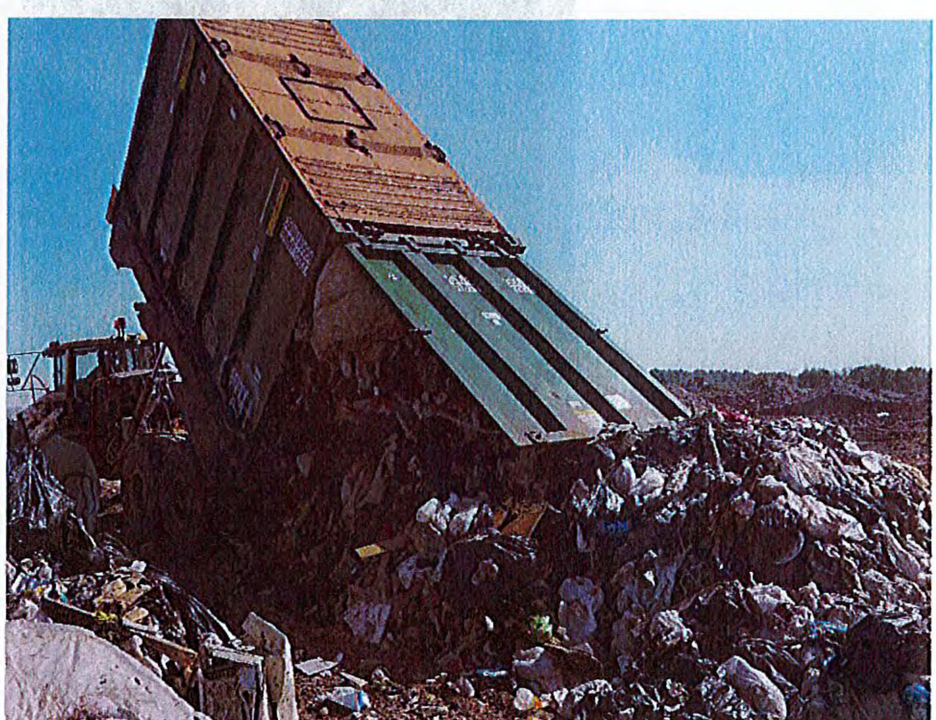


Photo 105 – Review Rail Container WMNY #10337 being unloaded in Cell 12

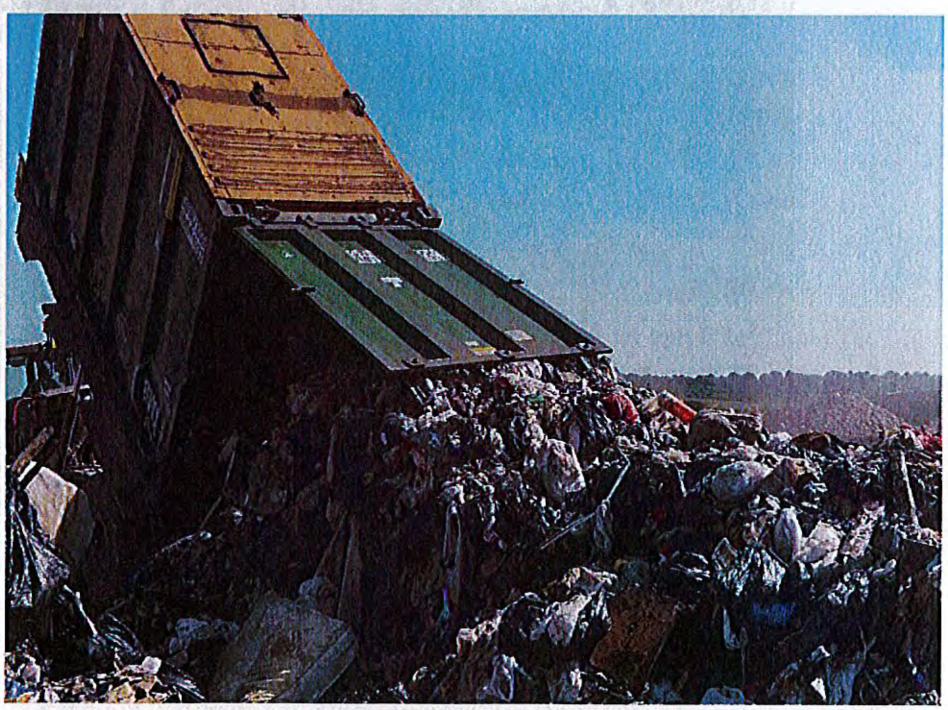


Photo 106 – Retrieving Temperature Probe from Review Rail Container WMNY #10337

Site Photographs

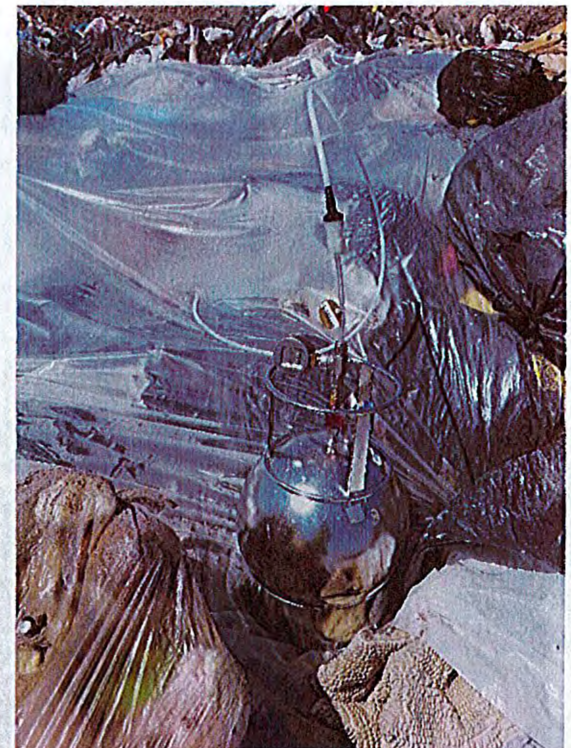


Photo 107 – Sampling Setup – Review Rail Container WMNY #10337 Waste Pile

Photo 108 – Review Rail Container WMNY #10337 Waste Pile

Site Photographs

Photo 109 – Compost windrow prior to being disturbed

Photo 110 – Compost windrow being disturbed

Site Photographs

Photo 111 – Compost Windrow (Disturbed)

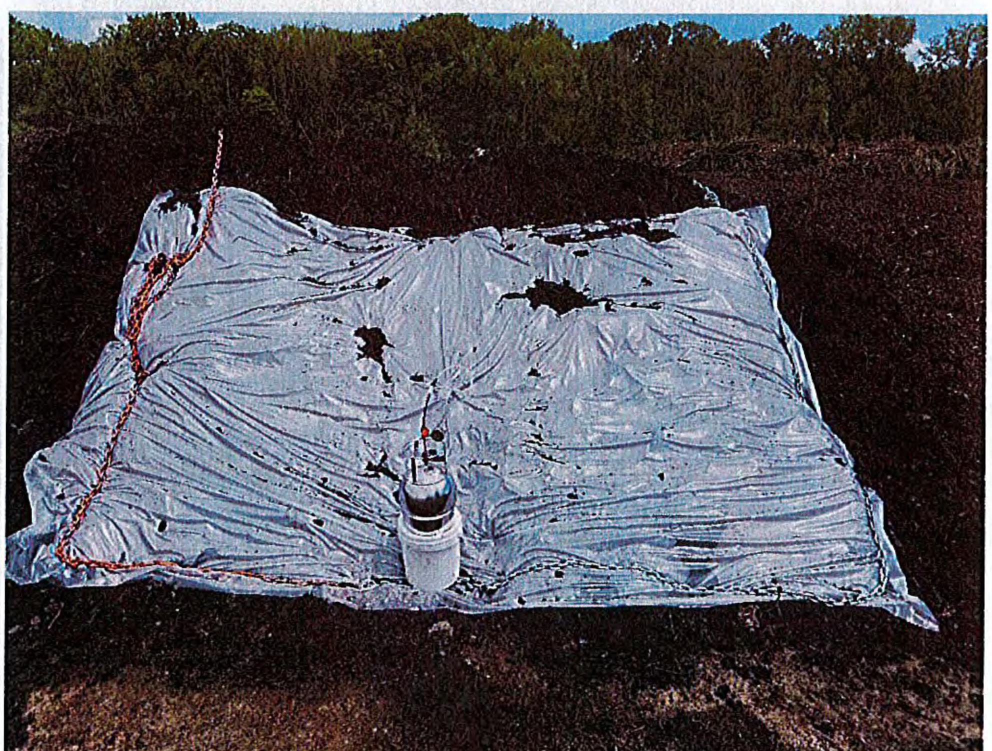


Photo 112 – Sampling Setup – Compost Windrow (Disturbed)

Site Photographs

Photo 113 – MTS Southwest Rail Container WMNY #1315 in Staging Area – Day 5

Photo 114 – MTS Southwest Rail Container WMNY #1315 being hoisted onto transport vehicle

Site Photographs

Photo 115 – MTS Southwest Rail Container WMNY #1315 ready to be unloaded in Cell 12

Photo 116 – MTS Southwest Rail Container WMNY #1315 being unloaded in Cell 12

Photo 117 – Sampling Setup – MTS Southwest Rail Container WMNY #1315 Waste Pile

Photo 118 – MTS Southwest Rail Container WMNY #1315 Waste Pile

Site Photographs

Photo 119 – MTS Hamilton Rail Container WMNY #2109 in Staging Area – Day 5

Photo 120 – MTS Hamilton Rail Container WMNY #2109 in Staging Area – Day 5

Site Photographs

Photo 121 – MTS Hamilton Rail Container WMNY #2109 – bottom middle of door

Photo 122 – MTS Hamilton Rail Container WMNY #2109 – bottom right of door

Site Photographs

Photo 123 – MTS Hamilton Rail Container WMNY #2109 being hoisted onto transport vehicle

Photo 124 – MTS Hamilton Rail Container WMNY #2109 ready to be unloaded in Cell 12

GHD

Site Photographs

Photo 125 – MTS Hamilton Rail Container WMNY #2109 being unloaded in Cell 12

Photo 126 – Retrieving Temp Probe from MTS Hamilton Rail Container WMNY #2109

Site Photographs

Photo 127 – Sampling Setup – MTS Hamilton Rail Container WMNY #2109 Waste Pile

Photo 128 – MTS Hamilton Rail Container WMNY #2109 Waste Pile

Site Photographs

Photo 129 – MTS Southwest Rail Container WMNY #1657 in Staging Area – Day 6

Photo 130 – MTS Southwest Rail Container WMNY #1657 being hoisted onto transport vehicle

GHD

Site Photographs

Photo 131 – MTS Southwest Rail Container WMNY #1657 ready to be unloaded in Cell 12

Photo 132 – MTS Southwest Rail Container WMNY #1657 being unloaded in Cell 12

Photo 133 – Sampling Setup – MTS Southwest Rail Container WMNY #1657 Waste Pile

Photo 134 – MTS Southwest Rail Container WMNY #1657 Waste Pile

Site Photographs

Photo 135 – MTS Hamilton Rail Container WMNY #0122 in Staging Area – Day 6

Photo 136 – MTS Hamilton Rail Container WMNY #0122 being hoisted onto transport vehicle

Site Photographs

Photo 137 – MTS Hamilton Rail Container WMNY #0122 ready to be unloaded in Cell 12

Photo 138 – MTS Hamilton Rail Container WMNY #0122 being unloaded in Cell 12

Site Photographs

Photo 139 – Sampling Setup – MTS Hamilton Rail Container WMNY #0122 Waste Pile

Photo 140 – MTS Hamilton Rail Container WMNY #0122 Waste Pile

Site Photographs

High Acres Landfill and Recycling Center
Offsite Odor Investigation Protocol

The following procedures shall be followed when performing offsite odor investigations related to routine inspections or in response to complaints received on the Facility's Odor Hotline (585) 453-2416.

- Before conducting odor investigations, personnel shall be trained in odor investigation techniques and tested for their olfactory sensitivity;
- Monitoring shall be performed by driving at slow speeds with windows down, or if warranted, by getting out of the vehicle;
- Vehicles used for monitoring shall be free of air fresheners, or other artificial scents to avoid interference with olfactory measurements;
- Investigators shall maintain n-butanol reference kits in vehicles when conducting investigations;
- Upon receiving a notification, the investigator shall record the following background information:
    - Date, time and serial number of complaint (if received on hotline)
    - Name and address of complainant (if given)
    - Location, nature and time of complaint (if given)
    - Investigator name
- The investigator shall record the results of the investigation at the complaint site on the Odor Complaint Investigation Report:
    - Time and date of odor investigation;
    - Weather conditions at time of investigation (wind direction, wind speed, temperature);
    - Maximum strength of odor observed at complaint location (n-butanol scale);
    - Character of odor;
    - Duration and Frequency of odors at complaint location;
    - Potential odor source;
- The investigator shall monitor additional points around the complaint site to determine extent of odors;
- Investigators shall maintains n-butanol reference kits in their vehicles when conducting investigations;
- Wind direction, temperature and other meteorological information is recorded as well as location and intensity of odor.
- Upon completion of the investigation, the results shall be reported to appropriate WM Personnel

I hereby certify that I have reviewed and understand the procedures to be followed when conducting offsite odor investigations.

____

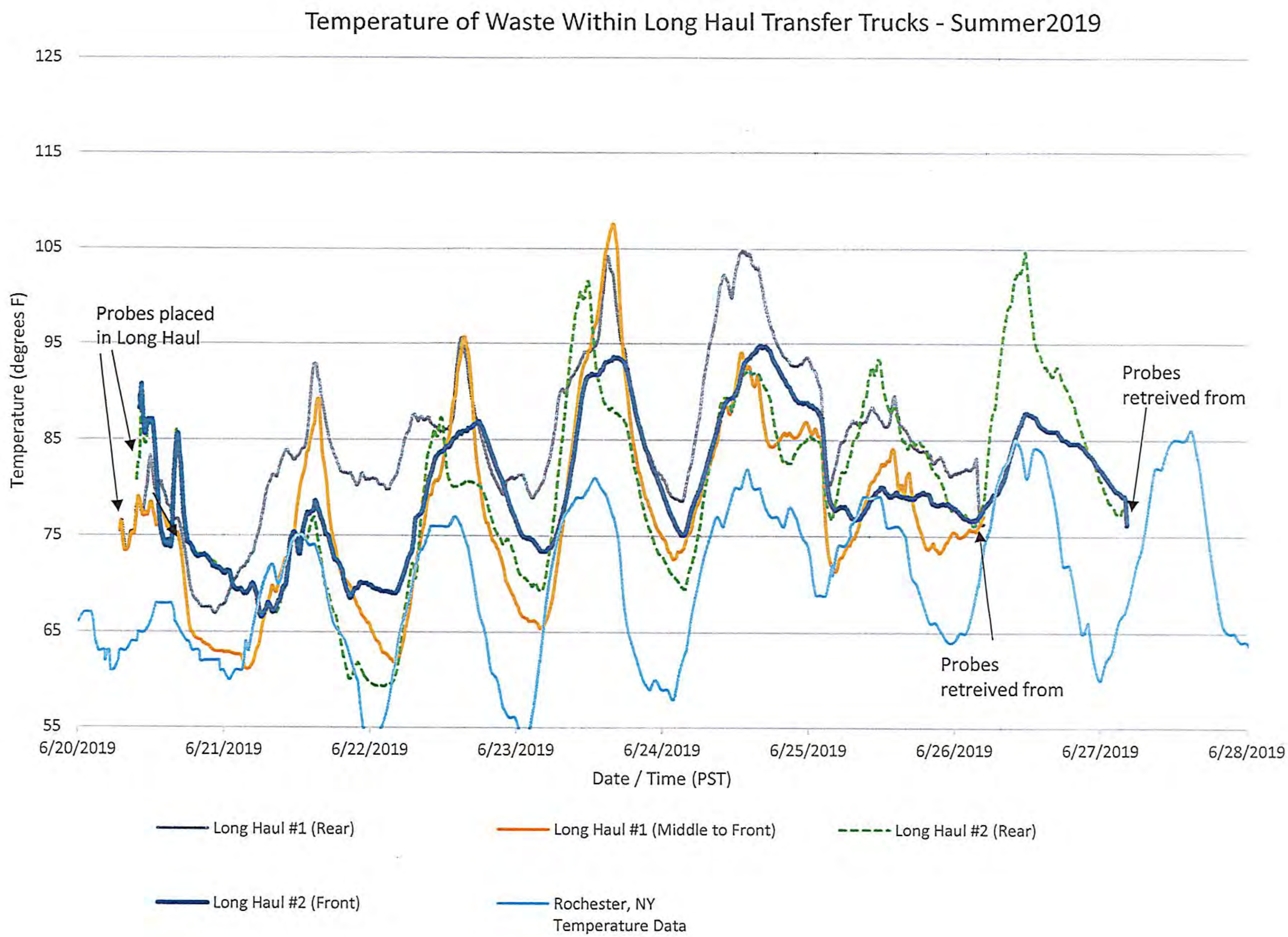
Printed Name

________________________________ ____________________

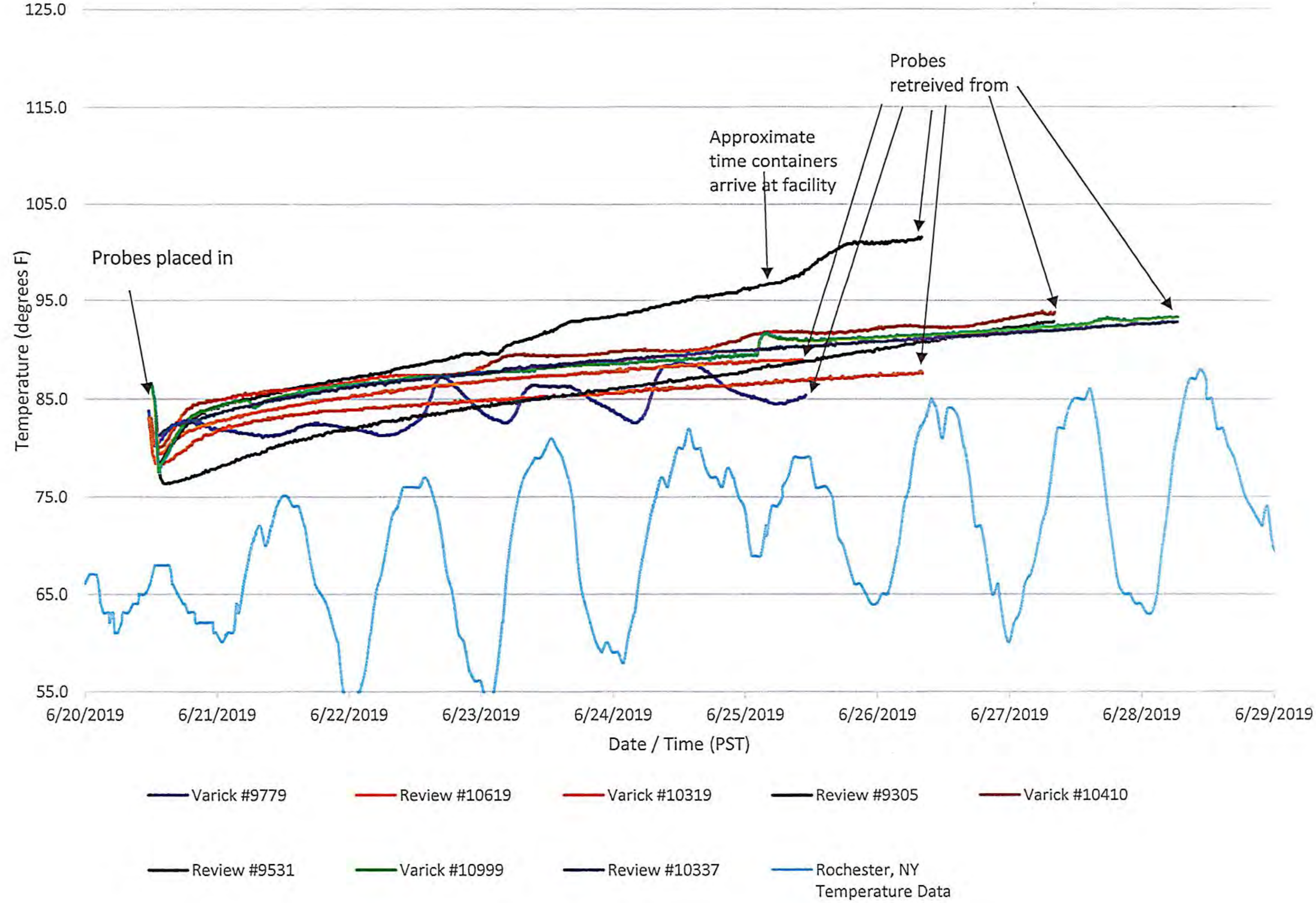
Signature Date

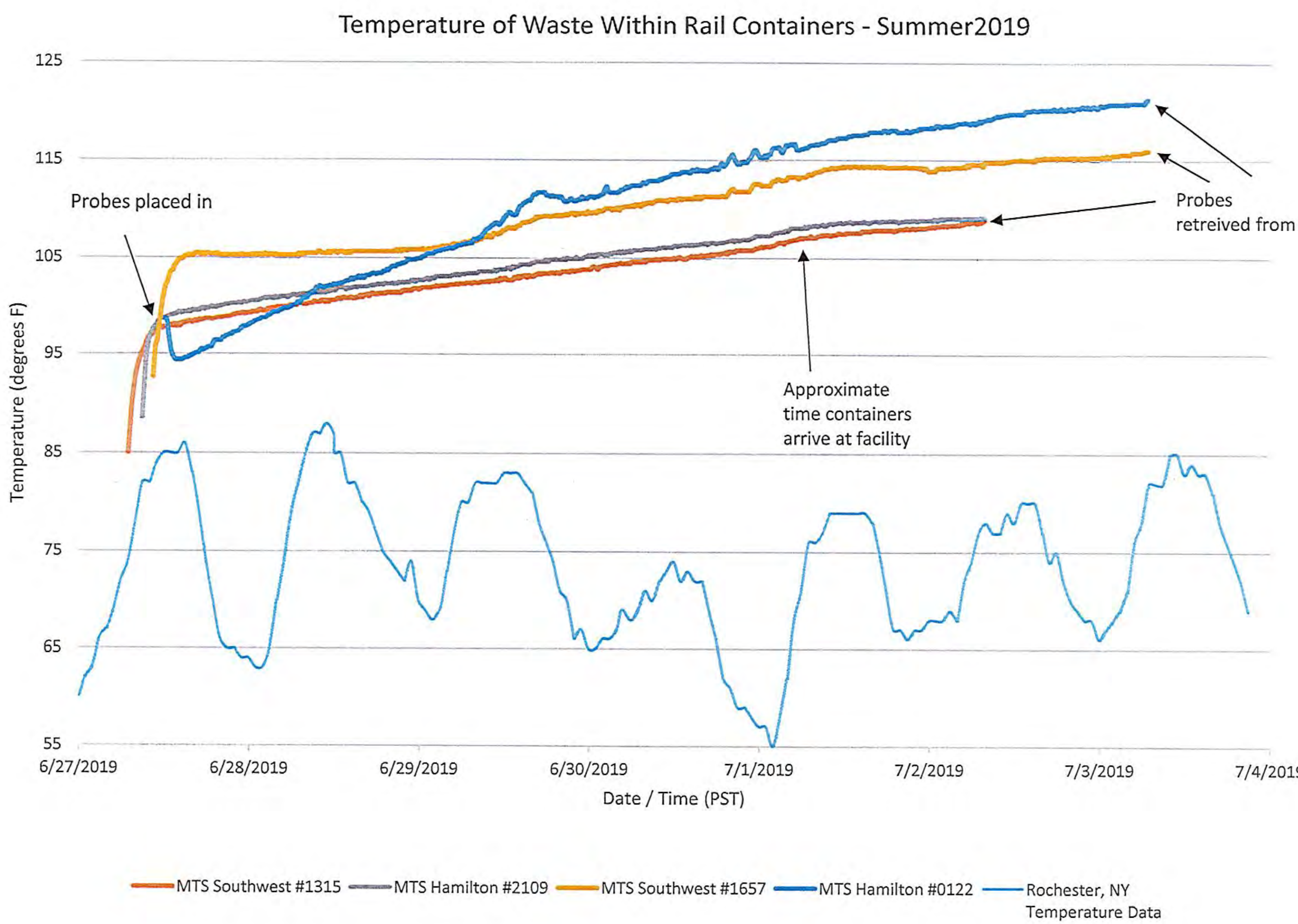
Landfill Odor Management

	Regulatory Requirements	Common Industry Practices	High Acres
Monthly Well Monitoring	✓	✓	✓
Quarterly Surface Scan (500 ppm) Action Level	✓	✓	✓
Gas Collection Within 5 Years of Waste Placement	✓	✓	✓
Vertical Wells	✓	✓	✓
Horizontal Collection - 20 feet Vertical and 100 feet Horizontal	✓	✓	✓
Gas Control Devices (Flares, Beneficial Reuse)	✓	✓	✓
Odor Control Plan	✓	✓	✓
Waste Identification and Screening	✓	✓	✓
Dedicated Staff to Monitor Gas System	✓	✓	✓
Monitoring for Off Site Fugitive Odors	✓	✓	✓
Operating Soil Cover (6 Inches)	✓	✓	✓
12 Inches of Intermediate Cover/Geomembrane Cover	✓	✓	✓
Waste Screening to Control Odors	✓	✓	✓
Dust Control Plan	✓	✓	✓
8 Hour Landfill Operator Training	✓	✓	✓
Limit Biosolids Acceptance to Less Than 10%		✓	✓
Incorporate Odorous Materials Into Waste and Limit Acceptance Times		✓	✓
Identify and Remove Odorous Waste Streams		✓	✓
Limit Size of Working Face		✓	✓
Strip Daily Cover Prior to New Waste Placement		✓	✓
Site Personnel Respond to Complaints		✓	✓
Perimeter Misting Systems		✓	✓
Working Face Misting Systems		✓	✓
Gas Well Dewatering (Limited)		✓	✓
Technicians On Call 24/7 to Respond to System Issues			✓
Quarterly Surface Scans (200 ppm) - Town/NYSDEC Screening Level			✓
Continuous Perimeter and Community H2S Monitoring (5 Fixed Locations)			✓
Installation of Base Gas Collection Grid Prior to Waste Placement (200 feet x 200 feet)			✓
Slip Wells Installed with Initial Waste Placement and Continuously Extended			✓
Reverberation Limiter Installed at Flares			✓
Automated Landfill Gas Well Dewatering System			✓
Extensive Waste Characterization Study Performed with Town and DEC			✓
Sulfur Containing Waste Removed from Site			✓
Biosolids Acceptance Less Than 5%			✓
Generator Visits to Recommend Additional Odor Treatment Methods			✓
Neutralizer Applied to Waste at Intermodal Transfer Sites and POTW Prior to Shipment			✓
Use of Granular Odor Control Neutralizer at Working Face			✓
Two Dedicated Water Trucks with Neutralizer for Odor and Dust Control			✓
Comprehensive Odor Control System Designed by Third-Party Engineering Firm			✓
Reconfigured Fill Progression Plans to Move Operations Further Away From Residents			✓
Constructing Larger Cells to Provide More Operational Flexibility (18 Months Rolling Capacity)			✓
Limited Alternate Operating Cover and Supplement with Soil Cover			✓
Pad-Foot Roller Used to Seal Soil Cover at End of Day			✓
Working Face Foreman Signoff on Cover Conditions at End of Working Day			✓
Purchase EPI Cover System as Daily Cover to Seal Working Face and Eliminate Soil Stripping (1.75 mil. Film Membrane)			✓
24/7 Hotline Established for Site In Conjunction with Town and DEC			✓
Certified Odor Training Conducted for In-House, Third-Party and Town Personnel			✓
Third-Party Contractor Performs Routine Off-Site Monitoring Through Surrounding Neighborhoods			✓
Hotline Complaints Investigated and Reported in Real Time to DEC, Site and Town			✓
Independent Expert Conducts Off-Site Odor Monitoring to Gauge Effectiveness of Site Improvements			✓
Bi-Weekly Meetings Held with Town to Review Odor Complaints and Investigations			✓


Temperature of Waste Within Long Haul Transfer Trucks - Summer2019
125
115
105
95
85
75
65
55
Temperature (degrees F)
Probes placed in Long Haul
Probes retreived from
Probes retreived from
6/20/2019
6/21/2019
6/22/2019
6/23/2019
6/24/2019
6/25/2019
6/26/2019
6/27/2019
6/28/2019
Date / Time (PST)
Long Haul #1 (Rear)
Long Haul #1 (Middle to Front)
Long Haul #2 (Rear)
Long Haul #2 (Front)
Rochester, NY Temperature Data

Temperature of Waste Within Rail Containers - Summer 2019





Temperature of Waste Within Rail Containers - Summer2019
125
115
105
95
85
75
65
55
Temperature (degrees F)
Probes placed in
Approximate
time containers
arrive at facility
Probes
retreived from
6/27/2019
6/28/2019
6/29/2019
6/30/2019
7/1/2019
7/2/2019
7/3/2019
7/4/2019
Date / Time (PST)
MTS Southwest #1315
MTS Hamilton #2109
MTS Southwest #1657
MTS Hamilton #0122
Rochester, NY
Temperature Data

APPENDIX D
RAIL CAR MONITORING RESULTS - DAY 1 (June 25, 2019)
WASTE ODOR EVALUATION
HIGH ACRES LANDFILL AND RECYCLING CENTER

Rail Car WMNY 9779
Varick Transfer Station

FID Reading = 80 - 100 ppm (left)

Landtec GEM Readings
- CH_4 = 2.1%
- CO_2 = 42.1%
- O_2 = 3.3%
- Balance = 52.5%
- Pressure = 0.02 "H_2O
- Probe Temp = 85.2 °F
- Ambient Air Temp = 80.0 °F

FID Reading = 300 - 400 ppm (right)

FID Reading = 100 - 150 ppm (bottom)

Rail Car WMNY 10319
Varick Transfer Station

FID Reading = 20.0 - 40.0 ppm (left)

Landtec GEM Readings
- CH_4 = 2.3%
- CO_2 = 43.8%
- O_2 = 0.1%
- Balance = 53.8%
- Pressure = -0.04 "H_2O
- Probe Temp = 86.9 °F
- Ambient Air Temp = 80.0 °F

FID Reading = 150 - 250 ppm (right)

FID Reading = Background (bottom)

Rail Car WMNY 10410
Varick Transfer Station

FID Reading = Background (left)

Landtec GEM Readings
- CH_4 = 2.4%
- CO_2 = 16.5%
- O_2 = 11.2%
- Balance = 69.9%
- Pressure = -0.06 "H_2O
- Probe Temp = 91.7 °F
- Ambient Air Temp = 80.0 °F

FID Reading = 10.0 - 20.0 ppm (right)

FID Reading = Background (bottom)

Rail Car WMNY 10999
Varick Transfer Station

FID Reading = Background (left)

Landtec GEM Readings
- CH_4 = 5.0%
- CO_2 = 62.0%
- O_2 = 0.0%
- Balance = 33.0%
- Pressure = -0.01 "H_2O
- Probe Temp = 90.9 °F
- Ambient Air Temp = 80.0 °F

FID Reading = Background (right)

FID Reading = Background (bottom)

Rail Car WMNY 10619
Review Transfer Station

FID Reading = Background (left)

Landtec GEM Readings
- CH_4 = 4.4%
- CO_2 = 69.4%
- O_2 = 0.1%
- Balance = 26.1%
- Pressure = 0.02 "H_2O
- Probe Temp = 88.9 °F
- Ambient Air Temp = 80.0 °F

FID Reading = Background (right)

FID Reading = Background (bottom)

Rail Car USWX 9305
Review Transfer Station

FID Reading = Background (left)

Landtec GEM Readings
- CH_4 = 0.6%
- CO_2 = 28.8%
- O_2 = 0.6%
- Balance = 70.0%
- Pressure = -0.08 "H_2O
- Probe Temp = 99.0 °F
- Ambient Air Temp = 80.0 °F

FID Reading = 5.0 - 7.0 ppm (right)

FID Reading = Background (bottom)

Rail Car USWX 9531
Review Transfer Station

FID Reading = Background (left)

Landtec GEM Readings
- CH_4 = 0.2%
- CO_2 = 0.9%
- O_2 = 19.2%
- Balance = 79.7%
- Pressure = -0.04 "H_2O
- Probe Temp = 89.0 °F
- Ambient Air Temp = 80.0 °F

FID Reading = 3.0 - 9.0 ppm (right)

FID Reading = 7.0 - 10.0 ppm (bottom)

Rail Car WMNY 10337
Review Transfer Station

FID Reading = Background (left)

Landtec GEM Readings
- CH_4 = 3.8%
- CO_2 = 54.7%
- O_2 = 0.0%
- Balance = 41.4%
- Pressure = -0.06 "H_2O
- Probe Temp = 90.4 °F
- Ambient Air Temp = 80.0 °F

FID Reading = 500 ppm (right)

FID Reading = Background (bottom)

Note: Background concentration was assumed to be 0 - 2 parts per million (ppm)

APPENDIX D
RAIL CAR MONITORING RESULTS - DAY 2 (June 26, 2019)
WASTE ODOR EVALUATION
HIGH ACRES LANDFILL AND RECYCLING CENTER

Rail Car WMNY 9779
Varick Transfer Station

Rail Car Unloaded on June 25, 2019

Rail Car WMNY 10319
Varick Transfer Station

FID Reading = 300 - 400 ppm

Landtec GEM Readings
CH_4 = 2.0%
CO_2 = 43.8%
O_2 = 0.0%
Balance = 54.1%
Pressure = -0.01 "H_2O

Probe Temp = 87.8 °F
Ambient Air Temp = 84.0 °F

FID Reading = 200 - 300 ppm

FID Reading = Background

Rail Car WMNY 10410
Varick Transfer Station

FID Reading = Background

Landtec GEM Readings
CH_4 = 1.4%
CO_2 = 32.7%
O_2 = 4.3%
Balance = 61.6%
Pressure = -0.03 "H_2O

Probe Temp = 92.3 °F
Ambient Air Temp = 80.0 °F

FID Reading = 100 - 150 ppm

FID Reading = 3.0 - 4.0 ppm

Rail Car WMNY 10999
Varick Transfer Station

FID Reading = Background

Landtec GEM Readings
CH_4 = 4.2%
CO_2 = 60.3%
O_2 = 0.3%
Balance = 35.2%
Pressure = -0.06 "H_2O

Probe Temp = 91.7 °F
Ambient Air Temp = 80.0 °F

FID Reading = Background

FID Reading = Background

Rail Car WMNY 10619
Review Transfer Station

Rail Car Unloaded on June 25, 2019

Rail Car USWX 9305
Review Transfer Station

FID Reading = 3.0 - 8.0 ppm

Landtec GEM Readings
CH_4 = 0.5%
CO_2 = 29.2%
O_2 = 0.1%
Balance = 70.2%
Pressure = -0.01 "H_2O

Probe Temp = 101.6 °F
Ambient Air Temp = 84.0 °F

FID Reading = Background

FID Reading = Background

Rail Car USWX 9531
Review Transfer Station

FID Reading = 3.0 - 5.0 ppm

Landtec GEM Readings
CH_4 = 0.2%
CO_2 = 4.2%
O_2 = 17.5%
Balance = 78.2%
Pressure = 0.02 "H_2O

Probe Temp = 91.3 °F
Ambient Air Temp = 80.0 °F

FID Reading = 30.0 - 40.0 ppm

FID Reading = 3.0 ppm

Rail Car WMNY 10337
Review Transfer Station

FID Reading = Background

Landtec GEM Readings
CH_4 = 3.6%
CO_2 = 53.7%
O_2 = 0.2%
Balance = 42.5%
Pressure = -0.01 "H_2O

Probe Temp = 91.3 °F
Ambient Air Temp = 80.0 °F

FID Reading = 500 ppm

FID Reading = 3.0 - 5.0 ppm

Note: Background concentration was assumed to be 0 - 2 parts per million (ppm)

APPENDIX D
RAIL CAR MONITORING RESULTS - DAY 3 (June 27, 2019)
WASTE ODOR EVALUATION
HIGH ACRES LANDFILL AND RECYCLING CENTER

Rail Car WMNY 9779
Varick Transfer Station

Rail Car Unloaded on
June 25, 2019

Rail Car WMNY 10319
Varick Transfer Station

Rail Car Unloaded on
June 26, 2019

Rail Car WMNY 10410
Varick Transfer Station

FID Reading = Background

Landtec GEM Readings
CH_4 = 1.8%
CO_2 = 43.8%
O_2 = 0.0%
Balance = 54.4%
Pressure = 0.01 "H_2O

Probe Temp = 93.6 °F
Ambient Air Temp = 83.0 °F

FID Reading = 100 - 150 ppm

FID Reading = 3.0 - 10.0 ppm

Rail Car WMNY 10999
Varick Transfer Station

FID Reading = Background

Landtec GEM Readings
CH_4 = 3.2%
CO_2 = 58.3%
O_2 = 0.0%
Balance = 38.5%
Pressure = 0.02 "H_2O

Probe Temp = 92.3 °F
Ambient Air Temp = 83.0 °F

FID Reading = Background

FID Reading = Background

Rail Car WMNY 10619
Review Transfer Station

Rail Car Unloaded on
June 25, 2019

Rail Car USWX 9305
Review Transfer Station

Rail Car Unloaded on
June 26, 2019

Rail Car USWX 9531
Review Transfer Station

FID Reading = 3.0 - 9.0 ppm

Landtec GEM Readings
CH_4 = 0.2%
CO_2 = 2.7%
O_2 = 18.8%
Balance = 78.3%
Pressure = 0.01 "H_2O

Probe Temp = 92.8 °F
Ambient Air Temp = 83.0 °F

FID Reading = 35.0 ppm

FID Reading = 36.0 - 37.0 ppm

Rail Car WMNY 10337
Review Transfer Station

FID Reading = Background

Landtec GEM Readings
CH_4 = 2.4%
CO_2 = 52.9%
O_2 = 0.0%
Balance = 44.7%
Pressure = -0.03 "H_2O

Probe Temp = 91.9 °F
Ambient Air Temp = 83.0 °F

FID Reading = 570 ppm

FID Reading = 3.0 - 5.0 ppm

Note: Background concentration was assumed to be 0 - 2 parts per million (ppm)

APPENDIX D
RAIL CAR MONITORING RESULTS - DAY 4 (June 28, 2019)
WASTE ODOR EVALUATION
HIGH ACRES LANDFILL AND RECYCLING CENTER

Rail Car WMNY 9779
Varick Transfer Station

Rail Car Unloaded on June 25, 2019

Rail Car WMNY 10319
Varick Transfer Station

Rail Car Unloaded on June 26, 2019

Rail Car WMNY 10410
Varick Transfer Station

Rail Car Unloaded on June 27, 2019

Rail Car WMNY 10999
Varick Transfer Station

Landtec GEM Readings
CH_4 = 2.6%
CO_2 = 52.3%
O_2 = 0.0%
Balance = 45.1%
Pressure = 0.02 "H_2O

Probe Temp = 93.2 °F
Ambient Air Temp = 87.0 °F

FID Reading = Background (left)
FID Reading = Background (right)
FID Reading = Background (bottom)

Rail Car WMNY 10619
Review Transfer Station

Rail Car Unloaded on June 25, 2019

Rail Car USWX 9305
Review Transfer Station

Rail Car Unloaded on June 26, 2019

Rail Car USWX 9531
Review Transfer Station

Rail Car Unloaded on June 27, 2019

Rail Car WMNY 10337
Review Transfer Station

Landtec GEM Readings
CH_4 = 1.9%
CO_2 = 49.5%
O_2 = 0.1%
Balance = 48.6%
Pressure = -0.02 "H_2O

Probe Temp = 92.8 °F
Ambient Air Temp = 87.0 °F

FID Reading = Background (left)
FID Reading = 500 ppm (right)
FID Reading = Background (bottom)

Note: Background concentration was assumed to be 0 - 2 parts per million (ppm)

APPENDIX D
RAIL CAR MONITORING RESULTS - DAY 5 (July 2, 2019)
WASTE ODOR EVALUATION
HIGH ACRES LANDFILL AND RECYCLING CENTER

Rail Car WMNY 1315
MTS Southwest Transfer Station

Landtec GEM Readings
CH_4 = 4.1%
CO_2 = 78.9%
O_2 = 0.0%
Balance = 17.0%
Pressure = -0.01 "H_2O

Probe Temp = 107.1 °F
Ambient Air Temp = 77.0 °F

FID Reading = Background (left side)
FID Reading = Background (right side)
FID Reading = Background (bottom)

Rail Car WMNY 1657
MTS Southwest Transfer Station

Landtec GEM Readings
CH_4 = 2.4%
CO_2 = 79.0%
O_2 = 0.0%
Balance = 21.6%
Pressure = 0.00 "H_2O

Probe Temp = 113.3 °F
Ambient Air Temp = 77.0 °F

FID Reading = Background (left side)
FID Reading = Background (right side)
FID Reading = Background (bottom)

Rail Car WMNY 2109
MTS Hamilton Transfer Station

Landtec GEM Readings
CH_4 = 5.5%
CO_2 = 53.5%
O_2 = 0.0%
Balance = 44.3%
Pressure = 0.02 "H_2O

Probe Temp = 108.1 °F
Ambient Air Temp = 77.0 °F

FID Reading = Background (left side)
FID Reading = Background (right side)
FID Reading = Background (bottom)

Rail Car WMNY 0122
MTS Hamilton Transfer Station

Landtec GEM Readings
CH_4 = 3.9%
CO_2 = 69.6%
O_2 = 0.0%
Balance = 26.5%
Pressure = 0.01 "H_2O

Probe Temp = 116.2 °F
Ambient Air Temp = 77.0 °F

FID Reading = 12.0 ppm (left side)
FID Reading = Background (right side)
FID Reading = Background (bottom)

Note: Background concentration was assumed to be 0 - 2 parts per million (ppm)

APPENDIX D
RAIL CAR MONITORING RESULTS - DAY 6 (July 3, 2019)
WASTE ODOR EVALUATION
HIGH ACRES LANDFILL AND RECYCLING CENTER

Rail Car WMNY 1315
MTS Southwest Transfer Station

Rail Car Unloaded on
July 2, 2019

Rail Car WMNY 1657
MTS Southwest Transfer Station

Landtec GEM Readings
CH_4 = 3.4%
CO_2 = 78.6%
O_2 = 0.0%
Balance = 18.0%
Pressure = -0.03 "H_2O

Probe Temp = 114.6 °F
Ambient Air Temp = 82.0 °F

FID Reading = Background (left side)
FID Reading = 766 ppm (right side)
FID Reading = Background (bottom)

Rail Car WMNY 2109
MTS Hamilton Transfer Station

Rail Car Unloaded on
July 2, 2019

Rail Car WMNY 0122
MTS Hamilton Transfer Station

Landtec GEM Readings
CH_4 = 3.8%
CO_2 = 70.2%
O_2 = 0.0%
Balance = 26.0%
Pressure = -0.03 "H_2O

Probe Temp = 118.9 °F
Ambient Air Temp = 82.0 °F

FID Reading = 8.0 ppm (left side)
FID Reading = Background (right side)
FID Reading = Background (bottom)

Note: Background concentration was assumed to be 0 - 2 parts per million (ppm)

CAS	Compound	Units	Local Rear Load	Local Front Load	Biosolids	Varick Container In-Situ Day #1	Review Container In-Situ Day #1	Varick Long Haul #1	Varick Container In-Situ Day #2
	Sample Area:		Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area
	Sample ID:		WM-11196934-062419-MAC-001	WM-11196934-062419-MAC-002	WM-11196934-062519-MAC-003	WM-11196934-062519-MAC-004	WM-11196934-062519-MAC-005	WM-11196934-062619-MAC-006	WM-11196934-062619-MAC-007
	Sample Date / Time:		6/24/19 11:02 - 12:32	6/24/19 12:32 - 14:02	6/25/19 10:56 - 12:26	6/25/19 14:50 - 16:25	6/25/19 15:00 - 16:28	6/26/19 8:34 - 9:58	6/26/19 12:06 - 13:31
	Temperature Logger Serial #:		NA	NA	NA	206609-4	206609-0	206609-7, 206609-8	206609-5
	Odor Intensity Reading:		1.0 - 1.5	0.5	1.5 - 2.0	0.5 - 1.0	1.0	0.5	1.0 - 1.5
	Moisture Content (%):		42.5	57.8	35.3	46.8	47.5	46.1	46.2
	Pile Temperature After Unloading (°F):		65 - 81	75 - 84	78 - 82	81 - 89	82 - 107	81 - 120	85 - 120
CAS	Compound	Units	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result
115-07-1	Propene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-71-8	Dichlorodifluoromethane (CFC 12)	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
74-87-3	Chloromethane	$\mu g/m^3$	ND	ND	90	ND	ND	ND	ND
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-01-4	Vinyl Chloride	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
106-99-0	1,3-Butadiene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
74-83-9	Bromomethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-00-3	Chloroethane	$\mu g/m^3$	ND	ND	73	ND	ND	ND	ND
64-17-5	Ethanol	$\mu g/m^3$	36,000 D	110,000 D	3,100	1,100,000 D	810,000 D	6,500	560,000 D
75-05-8	Acetonitrile	$\mu g/m^3$	14	ND	ND	ND	ND	35	ND
107-02-8	Acrolein	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
67-64-1	Acetone	$\mu g/m^3$	2,300	ND	5,200	ND	5,900	1,200	ND
75-69-4	Trichlorofluoromethane (CFC 11)	$\mu g/m^3$	ND	ND	22	ND	ND	17	ND
67-63-0	2-Propanol (Isopropyl Alcohol)	$\mu g/m^3$	450	520	530	27,000	9,600	90	4,700
107-13-1	Acrylonitrile	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-35-4	1,1-Dichloroethene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-09-2	Methylene Chloride	$\mu g/m^3$	120	52	ND	7,100	ND	ND	1,200
107-05-1	3-Chloro-1-propene (Allyl Chloride)	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
76-13-1	Trichlorotrifluoroethane (CFC 113)	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-15-0	Carbon Disulfide	$\mu g/m^3$	ND	ND	ND	ND	ND	46	ND
156-60-5	trans-1,2-Dichloroethene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-34-3	1,1-Dichloroethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
1634-04-4	Methyl tert-Butyl Ether	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
108-05-4	Vinyl Acetate	$\mu g/m^3$	630	930	ND	ND	ND	260	ND
78-93-3	2-Butanone (MEK)	$\mu g/m^3$	1,400	1,100	1,400	12,000	18,000	2,500 D	14,000
156-59-2	cis-1,2-Dichloroethene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
141-78-6	Ethyl Acetate	$\mu g/m^3$	1,500	6,000	46	17,000	21,000	520	9,700
110-54-3	n-Hexane	$\mu g/m^3$	56	ND	ND	ND	ND	9.5	ND
67-66-3	Chloroform	$\mu g/m^3$	ND	ND	55	ND	ND	ND	ND
109-99-9	Tetrahydrofuran (THF)	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
107-06-2	1,2-Dichloroethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
71-55-6	1,1,1-Trichloroethane	$\mu g/m^3$	43	32	ND	ND	ND	ND	ND
71-43-2	Benzene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
56-23-5	Carbon Tetrachloride	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
110-82-7	Cyclohexane	$\mu g/m^3$	130	ND	ND	ND	ND	ND	ND
78-87-5	1,2-Dichloropropane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-27-4	Bromodichloromethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
79-01-6	Trichloroethene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
123-91-1	1,4-Dioxane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
80-62-6	Methyl Methacrylate	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
142-82-5	n-Heptane	$\mu g/m^3$	170	260	ND	ND	ND	28	ND
10061-01-5	cis-1,3-Dichloropropene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
108-10-1	4-Methyl-2-pentanone	$\mu g/m^3$	ND	ND	ND	ND	ND	8.9	ND
10061-02-6	trans-1,3-Dichloropropene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
79-00-5	1,1,2-Trichloroethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
108-88-3	Toluene	$\mu g/m^3$	180	37	3,300	850	ND	18	470
591-78-6	2-Hexanone	$\mu g/m^3$	22	ND	ND	ND	ND	ND	ND
124-48-1	Dibromochloromethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
106-93-4	1,2-Dibromoethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
123-86-4	n-Butyl Acetate	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
111-65-9	n-Octane	$\mu g/m^3$	32	ND	ND	ND	ND	42	ND
127-18-4	Tetrachloroethene	$\mu g/m^3$	24	ND	ND	ND	ND	ND	ND
108-90-7	Chlorobenzene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
100-41-4	Ethylbenzene	$\mu g/m^3$	82	ND	ND	ND	ND	17	ND
179601-23-1	m,p-Xylenes	$\mu g/m^3$	230	ND	ND	770	ND	24	ND
75-25-2	Bromoform	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
100-42-5	Styrene	$\mu g/m^3$	230	130	ND	300	ND	71	ND
95-47-6	o-Xylene	$\mu g/m^3$	90	ND	ND	ND	ND	18	ND
111-84-2	n-Nonane	$\mu g/m^3$	38	ND	ND	680	ND	110	ND
79-34-5	1,1,2,2-Tetrachloroethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
98-82-8	Cumene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
80-56-8	alpha-Pinene	$\mu g/m^3$	880	310	ND	760	910	140	380
103-65-1	n-Propylbenzene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
622-96-8	4-Ethyltoluene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
108-67-8	1,3,5-Trimethylbenzene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
95-63-6	1,2,4-Trimethylbenzene	$\mu g/m^3$	24	ND	ND	ND	ND	27	ND
100-44-7	Benzyl Chloride	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
541-73-1	1,3-Dichlorobenzene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
106-46-7	1,4-Dichlorobenzene	$\mu g/m^3$	16	ND	ND	ND	ND	51	ND
95-50-1	1,2-Dichlorobenzene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
5989-27-5	d-Limonene	$\mu g/m^3$	4,300 D	4,300 D	68	9,400	16,000	5,100 D	8,200
96-12-8	1,2-Dibromo-3-chloropropane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND

	Sample Description:		Local Rear Load	Local Front Load	Biosolids	Varick Container In-Situ Day #1	Review Container In-Situ Day #1	Varick Long Haul #1	Varick Container In-Situ Day #2
	Sample Area:		Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area
	Sample ID:		WM-11196934-062419-MAC-001	WM-11196934-062419-MAC-002	WM-11196934-062519-MAC-003	WM-11196934-062519-MAC-004	WM-11196934-062519-MAC-005	WM-11196934-062619-MAC-006	WM-11196934-062619-MAC-007
	Sample Date / Time:		6/24/19 11:02 - 12:32	6/24/19 12:32 - 14:02	6/25/19 10:56 - 12:26	6/25/19 14:50 - 16:25	6/25/19 15:00 - 16:28	6/26/19 8:34 - 9:58	6/26/19 12:06 - 13:31
	Temperature Logger Serial #:		NA	NA	NA	206609-4	206609-0	206609-7, 206609-8	206609-5
	Odor Intensity Reading:		1.0 - 1.5	0.5	1.5 - 2.0	0.5 - 1.0	1.0	0.5	1.0 - 1.5
	Moisture Content (%):		42.5	57.8	35.3	46.8	47.5	46.1	46.2
120-82-1	1,2,4-Trichlorobenzene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
91-20-3	Naphthalene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
87-68-3	Hexachlorobutadiene	$\mu g/m^3$	ND V	ND V	ND V	ND V	ND	ND	ND
Tentatively Identified Compounds [1]									
CAS	Compound	Units	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result
	Propane	$\mu g/m^3$	1,500	1,600	-	1,500	-	-	-
	Dimethyl Ether	$\mu g/m^3$	890	160	-	1,600	-	-	-
	Isobutane	$\mu g/m^3$	10,000	5,800	-	41,000	15,000	1,400	8,600
	n-Butane	$\mu g/m^3$	1,300	4,700	-	6,000	3,400	260	-
	1,1-Dichloro-1-fluoroethane	$\mu g/m^3$	660	-	-	-	-	-	-
	n-Pentane	$\mu g/m^3$	610	840	-	7,000	12,000	590	2,700
	2-Butanol	$\mu g/m^3$	190	680	290	45,000	50,000	-	38,000
	Isobutanol	$\mu g/m^3$	280	360	-	1,100	1,400	-	-
	2-Methylhexane	$\mu g/m^3$	260	160	-	-	-	-	-
	3-Methylhexane	$\mu g/m^3$	250	180	-	-	-	-	-
	Acetoin	$\mu g/m^3$	430	390	-	-	-	-	-
	3-Methyl-1-butanol	$\mu g/m^3$	190	230	-	-	-	-	-
	Methylcyclohexane	$\mu g/m^3$	140	-	-	-	-	-	-
	Dimethyl disulfide	$\mu g/m^3$	940	-	100	1,100	1,400	910	-
	.beta.-Myrcene	$\mu g/m^3$	450	280	-	-	-	140	-
	beta-Pinene	$\mu g/m^3$	430	490	-	1,300	1,600	340	-
	(+)-3-Carene	$\mu g/m^3$	870	-	-	-	-	-	-
	1,2,3,4-Tetramethylbenzene	$\mu g/m^3$	180	-	-	-	-	-	-
	.gamma.-Terpinene	$\mu g/m^3$	260	230	-	-	-	140	-
	unknown Siloxane	$\mu g/m^3$	8,500	-	-	-	-	-	-
	2-Methylbutane	$\mu g/m^3$	-	130 - 51,000	-	21,000	-	-	-
	1-Propanol	$\mu g/m^3$	-	140	370	10,000	7,000	130	15,000
	Hexamethyldisiloxane	$\mu g/m^3$	-	160	-	-	-	-	-
	n-Hexanal	$\mu g/m^3$	-	110	-	-	-	-	-
	unknown hydrocarbon	$\mu g/m^3$	-	120	73	-	-	-	-
	Dimethyl Sulfide	$\mu g/m^3$	-	-	180	-	-	180	-
	n-Dodecane	$\mu g/m^3$	-	-	100	-	-	-	-
	n-Tridecane	$\mu g/m^3$	-	-	120	-	-	-	-
	n-Tetradecane	$\mu g/m^3$	-	-	83	-	-	-	-
	n-Decane	$\mu g/m^3$	-	-	-	2,100	-	230	-
	(C11H24) Alkane: Branched	$\mu g/m^3$	-	-	-	1,800	-	-	-
	5-Methyldecane	$\mu g/m^3$	-	-	-	1,100	-	-	-
	3-Methyldecane	$\mu g/m^3$	-	-	-	1,400	-	-	-
	n-Undecane	$\mu g/m^3$	-	-	-	4,400	-	-	-
	unknown Siloxane	$\mu g/m^3$	-	-	-	3,600	-	-	-
	Methyl Acetate	$\mu g/m^3$	-	-	-	-	1,800	-	-
	1-Butanol	$\mu g/m^3$	-	-	-	-	2,200	-	1,600
	Hexamethylcyclotrisiloxane	$\mu g/m^3$	-	-	-	-	1,900	-	1,900
	N,N-Dimethylmethylamine	$\mu g/m^3$	-	-	-	-	-	300	-
	(R)-2-butanol	$\mu g/m^3$	-	-	-	-	-	400	-
	2,5-Dimethylheptane	$\mu g/m^3$	-	-	-	-	-	180	-
	2,3-Dimethylheptane	$\mu g/m^3$	-	-	-	-	-	120	-
	Propylcyclohexane	$\mu g/m^3$	-	-	-	-	-	210	-
	Dimethyl trisulfide	$\mu g/m^3$	-	-	-	-	-	140	-
	2-Ethyl-1-hexanol	$\mu g/m^3$	-	-	-	-	-	120	-
	4,4-Dimethyl-1-pentene	$\mu g/m^3$	-	-	-	-	-	120	-
	unknown	$\mu g/m^3$	-	-	-	-	-	510	-
	Ethyl Butyrate	$\mu g/m^3$	-	-	-	-	-	-	-
	Acetaldehyde	$\mu g/m^3$	-	-	-	-	-	-	-
	Cyclopentane	$\mu g/m^3$	-	-	-	-	-	-	-
	2-Pentylfuran	$\mu g/m^3$	-	-	-	-	-	-	-
	2,2,4-Trimethylpentane	$\mu g/m^3$	-	-	-	-	-	-	-
	p-Isopropyltoluene	$\mu g/m^3$	-	-	-	-	-	-	-
	1,1-Difluoroethane	$\mu g/m^3$	-	-	-	-	-	-	-
	Ethyl ester propanoic acid	$\mu g/m^3$	-	-	-	-	-	-	-
	n-Propyl acetate	$\mu g/m^3$	-	-	-	-	-	-	-
	Ethyl Hexanoate	$\mu g/m^3$	-	-	-	-	-	-	-
	C9H18 hydrocarbon	$\mu g/m^3$	-	-	-	-	-	-	-
	2-Methylpropanal	$\mu g/m^3$	-	-	-	-	-	-	-
	Methacrolein	$\mu g/m^3$	-	-	-	-	-	-	-
	2,3-Butanedione	$\mu g/m^3$	-	-	-	-	-	-	-
	3-Methylfuran	$\mu g/m^3$	-	-	-	-	-	-	-
	3-Methylbutanal	$\mu g/m^3$	-	-	-	-	-	-	-
	n-Pentanal	$\mu g/m^3$	-	-	-	-	-	-	-
	Camphene	$\mu g/m^3$	-	-	-	-	-	-	-
	6-Methyl-5-hepten-2-one	$\mu g/m^3$	-	-	-	-	-	-	-
	n-Nonanal	$\mu g/m^3$	-	-	-	-	-	-	-
	Copaene	$\mu g/m^3$	-	-	-	-	-	-	-

CAS	Compound	Units	Local Rear Load	Local Front Load	Biosolids	Varick Container In-Situ Day #1	Review Container In-Situ Day #1	Varick Long Haul #1	Varick Container In-Situ Day #2
	Sample Area:		Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area
	Sample ID:		WM-11196934-062419-MAC-001	WM-11196934-062419-MAC-002	WM-11196934-062519-MAC-003	WM-11196934-062519-MAC-004	WM-11196934-062519-MAC-005	WM-11196934-062619-MAC-006	WM-11196934-062619-MAC-007
	Sample Date / Time:		6/24/19 11:02 - 12:32	6/24/19 12:32 - 14:02	6/25/19 10:56 - 12:26	6/25/19 14:50 - 16:25	6/25/19 15:00 - 16:28	6/26/19 8:34 - 9:58	6/26/19 12:06 - 13:31
	Temperature Logger Serial #:		NA	NA	NA	206609-4	206609-0	206609-7, 206609-8	206609-5
	Odor Intensity Reading:		1.0 - 1.5	0.5	1.5 - 2.0	0.5 - 1.0	1.0	0.5	1.0 - 1.5
	Moisture Content (%):		42.5	57.8	35.3	46.8	47.5	46.1	46.2
	Caryophyllene	µg/m³	-	-	-	-	-	-	-
	C9H18 Alkane	µg/m³	-	-	-	-	-	-	-
	C10H22 Compound	µg/m³	-	-	-	-	-	-	-
	C11H24 Compound	µg/m³	-	-	-	-	-	-	-
	C12H26 Compound	µg/m³	-	-	-	-	-	-	-
	Decahydro-, Transnaphthalene	µg/m³	-	-	-	-	-	-	-
	1,2,3,4-Tetrahydronaphthalene	µg/m³	-	-	-	-	-	-	-
	3-Methylnonane	µg/m³						-	-
	Ethyl Esterhexanoic Acid	µg/m³						-	-
CAS	Compound	Units	Method ASTM 5504 Result	Method ASTM 5504 Result	Method ASTM 5504 Result	Method ASTM 5504 Result	Method ASTM 5504 Result	Method ASTM 5504 Result	Method ASTM 5504 Result
7783-06-4	Hydrogen Sulfide	µg/m³	24	8.1 J	5.3 J	16	ND	ND	ND
463-58-1	Carbonyl Sulfide	µg/m³	21	80	70	52	84	23	40
74-93-1	Methyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
75-08-1	Ethyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
75-18-3	Dimethyl Sulfide	µg/m³	120	31	180	240	320	160	190
75-15-0	Carbon Disulfide	µg/m³	24	33	14	210	340	49	260
75-33-2	Isopropyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
75-66-1	tert-Butyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
107-03-9	n-Propyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
624-89-5	Ethyl Methyl Sulfide	µg/m³	ND	ND	ND	ND	ND	ND	ND
110-02-1	Thiophene	µg/m³	ND	ND	ND	ND	ND	ND	ND
513-44-0	Isobutyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
352-93-2	Diethyl Sulfide	µg/m³	ND	ND	ND	ND	ND	ND	ND
109-79-5	n-Butyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
624-92-0	Dimethyl Disulfide	µg/m³	1,100	51	96	910	2,300	1,200	1,200
616-44-4	3-Methylthiophene	µg/m³	ND	ND	ND	ND	ND	ND	ND
110-01-0	Tetrahydrothiophene	µg/m³	ND	ND	ND	ND	ND	ND	ND
638-02-8	2,5-Dimethylthiophene	µg/m³	ND	ND	ND	ND	24 J	ND	ND
872-55-9	2-Ethylthiophene	µg/m³	ND	ND	ND	ND	ND	ND	ND
110-81-6	Diethyl Disulfide	µg/m³	ND	ND	ND	ND	ND	ND	ND

Notes:

1	Only Tentatively Identified Compounds listed in the associated laboratory reports are shown.
µg/m³	Micrograms per cubic meter (parts per billion)
MRL	Method Reporting Limit
MDL	Method Detection Limit
ND	Not detected at a concentration at or above the laboratory's MRL (TO-15) or MDL (ASTM 5504). Refer to the associated laboratory reports for these limits.
NI	Not identified
NA	Not applicable
D	The reported result is from a dilution.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

	Sample Description:		Review Container In-Situ Day #2	Food Waste	Varick Long Haul #2	Varick Container In-Situ Day #3	Review Container In-Situ Day #3	Compost (Undisturbed)	Varick Container In-Situ Day #4
	Sample Area:		Cell 12 Active Area	Compost Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Compost Area	Cell 12 Active Area
	Sample ID:		WM-11196934-062619-MAC-008	WM-11196934-062619-MAC-009	WM-11196934-062719-MAC-010	WM-11196934-062719-MAC-011	WM-11196934-062719-MAC-012	WM-11196934-062719-MAC-013	WM-11196934-062819-MAC-014
	Sample Date / Time:		6/26/19 12:12 - 13:42	6/26/19 15:00 - 16:32	6/27/19 8:02 - 9:29	6/27/19 12:17 - 13:49	6/27/19 12:25 - 13:59	6/27/19 15:16 - 16:45	6/28/19 10:22 - 11:56
	Temperature Logger Serial #:		206608-9	NA	206609-6, 206609-9	206609-3	206608-8	NA	206609-1
	Odor Intensity Reading:		1.0 - 2.0	1.5 - 2.0	1.5 - 2.0	2.0	1.0 - 1.5	0 - 0.5	2.0
	Moisture Content (%):		65.4	55.4	81.3	63.3	27.9	57.2	54.2
	Pile Temperature After Unloading (°F):		82 - 109	[illegible]	89 - 120	79 - 109	83 - 116	128 - 142	81 - 113
CAS	Compound	Units	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result
115-07-1	Propene	$\mu g/m^3$	ND	58 J	22	5,800	680	7.9	730 J
75-71-8	Dichlorodifluoromethane (CFC 12)	$\mu g/m^3$	ND	ND	2.8 J	ND	ND	1.9	ND
74-87-3	Chloromethane	$\mu g/m^3$	ND	ND	3.7 J	ND	ND	4	ND
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-01-4	Vinyl Chloride	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
106-99-0	1,3-Butadiene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
74-83-9	Bromomethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-00-3	Chloroethane	$\mu g/m^3$	ND	ND	7.1 J	ND	ND	ND	ND
64-17-5	Ethanol	$\mu g/m^3$	1,200,000 D	530,000 D	25,000 D	1,700,000 D	780,000 D	22	1,500,000 D
75-05-8	Acetonitrile	$\mu g/m^3$	ND	ND	100	ND	130 J	1.9	ND
107-02-8	Acrolein	$\mu g/m^3$	ND	72 J	9.4 J	860 J	460 J	35	580 J
67-64-1	Acetone	$\mu g/m^3$	16,000	2,900	2,800	ND	20,000	380	4,200 J, M
75-69-4	Trichlorofluoromethane (CFC 11)	$\mu g/m^3$	ND	ND	5.1 J	ND	ND	1.1 J	ND
67-63-0	2-Propanol (Isopropyl Alcohol)	$\mu g/m^3$	23,000	970	440	26,000	17,000	5.6 J	23,000
107-13-1	Acrylonitrile	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-35-4	1,1-Dichloroethene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-09-2	Methylene Chloride	$\mu g/m^3$	13,000	ND	ND	6,600	2,700	0.91 J	660 J
107-05-1	3-Chloro-1-propene (Allyl Chloride)	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
76-13-1	Trichlorotrifluoroethane (CFC 113)	$\mu g/m^3$	ND	ND	ND	ND	ND	0.41 J	ND
75-15-0	Carbon Disulfide	$\mu g/m^3$	ND	ND	30 J	1,500	1,700	1.9 J	1,600
156-60-5	trans-1,2-Dichloroethene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
75-34-3	1,1-Dichloroethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
1634-04-4	Methyl tert-Butyl Ether	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
108-05-4	Vinyl Acetate	$\mu g/m^3$	ND	2,500	480	ND	1,400 J	71	ND
78-93-3	2-Butanone (MEK)	$\mu g/m^3$	54,000	280 J	4,800 D	50,000	61,000 D	45	37,000
156-59-2	cis-1,2-Dichloroethene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
141-78-6	Ethyl Acetate	$\mu g/m^3$	28,000	64,000	710	86,000	17,000	26	63,000
110-54-3	n-Hexane	$\mu g/m^3$	ND	ND	15 J	210 J	110 J	1.1 J	210 J
67-66-3	Chloroform	$\mu g/m^3$	ND	ND	3 J	140 J	49 J	0.37 J	ND
109-99-9	Tetrahydrofuran (THF)	$\mu g/m^3$	ND	ND	440	70 J	1,100	ND	ND
107-06-2	1,2-Dichloroethane	$\mu g/m^3$	ND	ND	ND	180 J	100 J	ND	ND
71-55-6	1,1,1-Trichloroethane	$\mu g/m^3$	ND	ND	ND	91 J	ND	ND	ND
71-43-2	Benzene	$\mu g/m^3$	ND	ND	4.8 J	81 J	49 J	0.85 J	ND
56-23-5	Carbon Tetrachloride	$\mu g/m^3$	ND	ND	ND	ND	ND	0.36 J	ND
110-82-7	Cyclohexane	$\mu g/m^3$	ND	ND	ND	200 J	ND	ND	ND
78-87-5	1,2-Dichloropropane	$\mu g/m^3$	ND	ND	3.5 J	ND	ND	ND	ND
75-27-4	Bromodichloromethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
79-01-6	Trichloroethene	$\mu g/m^3$	ND	ND	39	ND	ND	ND	ND
123-91-1	1,4-Dioxane	$\mu g/m^3$	ND	ND	13 J	ND	ND	ND	ND
80-62-6	Methyl Methacrylate	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	300 J
142-82-5	n-Heptane	$\mu g/m^3$	ND	ND	62	290 J	260	2.1	600 J
10061-01-5	cis-1,3-Dichloropropene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
108-10-1	4-Methyl-2-pentanone	$\mu g/m^3$	ND	ND	12 J	ND	110 J	2.2	ND
10061-02-6	trans-1,3-Dichloropropene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
79-00-5	1,1,2-Trichloroethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
108-88-3	Toluene	$\mu g/m^3$	2,100	ND	40	1,500	3,800	6.4	780
591-78-6	2-Hexanone	$\mu g/m^3$	ND	ND	20	ND	ND	1.5	ND
124-48-1	Dibromochloromethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
106-93-4	1,2-Dibromoethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
123-86-4	n-Butyl Acetate	$\mu g/m^3$	ND	28 J	7.7 J	960	350	0.52 J	780
111-65-9	n-Octane	$\mu g/m^3$	ND	56 J	83	680	420	2.6	750 J
127-18-4	Tetrachloroethene	$\mu g/m^3$	ND	ND	2.4 J	98 J	180 J	ND	ND
108-90-7	Chlorobenzene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
100-41-4	Ethylbenzene	$\mu g/m^3$	ND	ND	56	300 J	1,100	0.22 J	200 J
179601-23-1	m,p-Xylenes	$\mu g/m^3$	ND	ND	34	340 J	3,200	0.82 J	330 J
75-25-2	Bromoform	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
100-42-5	Styrene	$\mu g/m^3$	670	ND	360	860	820	0.55 J	480 J
95-47-6	o-Xylene	$\mu g/m^3$	ND	ND	18	150 J	800	0.32 J	130 J
111-84-2	n-Nonane	$\mu g/m^3$	890	ND	40	840	1,900	0.85 J	1,100
79-34-5	1,1,2,2-Tetrachloroethane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
98-82-8	Cumene	$\mu g/m^3$	ND	ND	9.1 J	ND	61 J	ND	ND
80-56-8	alpha-Pinene	$\mu g/m^3$	1,600	130 J	430	4,300	2,700	68	2,700
103-65-1	n-Propylbenzene	$\mu g/m^3$	ND	ND	7.8 J	150 J	110 J	0.23 J	ND
622-96-8	4-Ethyltoluene	$\mu g/m^3$	ND	ND	3.8 J	230 J	130 J	ND	ND
108-67-8	1,3,5-Trimethylbenzene	$\mu g/m^3$	ND	ND	3.2 J	210 J	150 J	ND	ND
95-63-6	1,2,4-Trimethylbenzene	$\mu g/m^3$	ND	ND	11 J	730	380	0.62 J	ND
100-44-7	Benzyl Chloride	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
541-73-1	1,3-Dichlorobenzene	$\mu g/m^3$	ND	ND	ND	ND	ND	0.56 J	ND
106-46-7	1,4-Dichlorobenzene	$\mu g/m^3$	ND	ND	540	180 J	38 J	ND	170 J
95-50-1	1,2-Dichlorobenzene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
5989-27-5	d-Limonene	$\mu g/m^3$	30,000	1,500	9,200 D	72,000	38,000	7.3	32,000
96-12-8	1,2-Dibromo-3-chloropropane	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND

	Sample Description:		Review Container In-Situ Day #2	Food Waste	Varick Long Haul #2	Varick Container In-Situ Day #3	Review Container In-Situ Day #3	Compost (Undisturbed)	Varick Container In-Situ Day #4
	Sample Area:		Cell 12 Active Area	Compost Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Compost Area	Cell 12 Active Area
	Sample ID:		WM-11196934-062619-MAC-008	WM-11196934-062619-MAC-009	WM-11196934-062719-MAC-010	WM-11196934-062719-MAC-011	WM-11196934-062719-MAC-012	WM-11196934-062719-MAC-013	WM-11196934-062819-MAC-014
	Sample Date / Time:		6/26/19 12:12 - 13:42	6/26/19 15:00 - 16:32	6/27/19 8:02 - 9:29	6/27/19 12:17 - 13:49	6/27/19 12:25 - 13:59	6/27/19 15:16 - 16:45	6/28/19 10:22 - 11:56
	Temperature Logger Serial #:		206608-9	NA	206609-6, 206609-9	206609-3	206608-8	NA	206609-1
	Odor Intensity Reading:		1.0 - 2.0	1.5 - 2.0	1.5 - 2.0	2.0	1.0 - 1.5	0 - 0.5	2.0
	Moisture Content (%):		65.4	55.4	81.3	63.3	27.9	57.2	54.2
120-82-1	1,2,4-Trichlorobenzene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
91-20-3	Naphthalene	$\mu g/m^3$	ND	ND	25	ND	ND	0.56 J	ND
87-68-3	Hexachlorobutadiene	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND
Tentatively Identfied Compounds [1]									
CAS	Compound	Units	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result
	Propane	$\mu g/m^3$	-	-	-	-	-	-	-
	Dimethyl Ether	$\mu g/m^3$	-	-	-	-	-	-	-
	Isobutane	$\mu g/m^3$	18,000	-	3,000	79,000	49,000	-	44,000
	n-Butane	$\mu g/m^3$	2,100	-	210	21,000	120,000	-	13,000
	1,1-Dichloro-1-fluoroethane	$\mu g/m^3$	-	-	-	-	-	-	-
	n-Pentane	$\mu g/m^3$	5,600	-	1,100	47,000	21,000	-	26,000
	2-Butanol	$\mu g/m^3$	85,000	-	2,000	180,000	97,000	-	130,000
	Isobutanol	$\mu g/m^3$	2,800	-	280	3,400	3,200	-	-
	2-Methylhexane	$\mu g/m^3$	-	-	-	-	-	-	-
	3-Methylhexane	$\mu g/m^3$	-	-	-	-	-	-	-
	Acetoin	$\mu g/m^3$	-	-	-	-	-	-	-
	3-Methyl-1-butanol	$\mu g/m^3$	-	1,300	-	2,000	1,900	-	-
	Methylcyclohexane	$\mu g/m^3$	-	-	-	-	-	-	-
	Dimethyl disulfide	$\mu g/m^3$	-	-	470	1,900	2,000	-	-
	.beta.-Myrcene	$\mu g/m^3$	-	-	-	2,200	1,800	-	-
	beta-Pinene	$\mu g/m^3$	2,500	-	880	6,200	5,000	14	-
	(+)-3-Carene	$\mu g/m^3$	-	-	220	-	1,200	-	-
	1,2,3,4-Tetramethylbenzene	$\mu g/m^3$	-	-	-	-	-	-	-
	.gamma.-Terpinene	$\mu g/m^3$	-	-	610	2,800	2,500	-	-
	unknown Siloxane	$\mu g/m^3$	-	-	-	-	-	-	-
	2-Methylbutane	$\mu g/m^3$	-	-	-	69,000	-	-	-
	1-Propanol	$\mu g/m^3$	12,000	670	440	280,000	13,000	-	82,000
	Hexamethyldisiloxane	$\mu g/m^3$	-	-	-	5,400	-	-	-
	n-Hexanal	$\mu g/m^3$	-	-	210	-	2,200	-	-
	unknown hydrocarbon	$\mu g/m^3$	-	-	-	-	1,500	-	-
	Dimethyl Sulfide	$\mu g/m^3$	-	-	-	-	3,300	-	-
	n-Dodecane	$\mu g/m^3$	-	-	-	-	-	27	-
	n-Tridecane	$\mu g/m^3$	-	-	-	-	-	-	-
	n-Tetradecane	$\mu g/m^3$	-	-	-	-	-	12	-
	n-Decane	$\mu g/m^3$	-	-	-	-	3,000	12	-
	(C11H24) Alkane: Branched	$\mu g/m^3$	-	-	-	-	-	-	-
	5-Methyldecane	$\mu g/m^3$	-	-	-	-	-	-	-
	3-Methyldecane	$\mu g/m^3$	-	-	-	-	-	-	-
	n-Undecane	$\mu g/m^3$	-	-	-	-	-	-	-
	unknown Siloxane	$\mu g/m^3$	-	-	1,600 - 2,200	-	3,100	-	15,000
	Methyl Acetate	$\mu g/m^3$	-	1,600	-	-	-	-	4,100
	1-Butanol	$\mu g/m^3$	4,300	-	300	-	-	-	10,000
	Hexamethylcyclotrisiloxane	$\mu g/m^3$	2,700	-	-	-	-	-	-
	N,N-Dimethylmethylamine	$\mu g/m^3$	-	-	510	-	-	-	-
	(R)-2-butanol	$\mu g/m^3$	-	-	-	-	-	-	-
	2,5-Dimethylheptane	$\mu g/m^3$	-	-	-	-	-	-	-
	2,3-Dimethylheptane	$\mu g/m^3$	-	-	-	-	-	-	-
	Propylcyclohexane	$\mu g/m^3$	-	-	-	-	-	-	-
	Dimethyl trisulfide	$\mu g/m^3$	-	-	-	-	-	-	-
	2-Ethyl-1-hexanol	$\mu g/m^3$	-	-	-	-	-	-	-
	4,4-Dimethyl-1-pentene	$\mu g/m^3$	-	-	-	-	-	-	-
	unknown	$\mu g/m^3$	-	-	-	-	-	20 - 37	-
	Ethyl Butyrate	$\mu g/m^3$	2,100	-	-	5,900	1,900	-	4,900
	Acetaldehyde	$\mu g/m^3$	-	11,000	200	-	-	70	-
	Cyclopentane	$\mu g/m^3$	-	-	730	-	-	-	-
	2-Pentylfuran	$\mu g/m^3$	-	-	530	-	-	-	-
	2,2,4-Trimethylpentane	$\mu g/m^3$	-	-	300	-	-	-	-
	p-Isopropyltoluene	$\mu g/m^3$	-	-	310	-	1,800	-	-
	1,1-Difluoroethane	$\mu g/m^3$	-	-	-	3,400	-	-	-
	Ethyl ester propanoic acid	$\mu g/m^3$	-	-	-	3,100	-	-	-
	n-Propyl acetate	$\mu g/m^3$	-	-	-	18,000	-	-	-
	Ethyl Hexanoate	$\mu g/m^3$	-	-	-	2,400	-	-	-
	C9H18 hydrocarbon	$\mu g/m^3$	-	-	-	-	1,000	-	-
	2-Methylpropanal	$\mu g/m^3$	-	-	-	-	-	24	-
	Methacrolein	$\mu g/m^3$	-	-	-	-	-	22	-
	2,3-Butanedione	$\mu g/m^3$	-	-	-	-	-	25	-
	3-Methylfuran	$\mu g/m^3$	-	-	-	-	-	14	-
	3-Methylbutanal	$\mu g/m^3$	-	-	-	-	-	15	-
	n-Pentanal	$\mu g/m^3$	-	-	-	-	-	13	-
	Camphene	$\mu g/m^3$	-	-	-	-	-	16	-
	6-Methyl-5-hepten-2-one	$\mu g/m^3$	-	-	-	-	-	16	-
	n-Nonanal	$\mu g/m^3$	-	-	-	-	-	21	-
	Copaene	$\mu g/m^3$	-	-	-	-	-	12	-

CAS	Compound	Units	Review Container In-Situ Day #2	Food Waste	Varick Long Haul #2	Varick Container In-Situ Day #3	Review Container In-Situ Day #3	Compost (Undisturbed)	Varick Container In-Situ Day #4
	Sample Area:		Cell 12 Active Area	Compost Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Compost Area	Cell 12 Active Area
	Sample ID:		WM-11196934-062619-MAC-008	WM-11196934-062619-MAC-009	WM-11196934-062719-MAC-010	WM-11196934-062719-MAC-011	WM-11196934-062719-MAC-012	WM-11196934-062719-MAC-013	WM-11196934-062819-MAC-014
	Sample Date / Time:		6/26/19 12:12 - 13:42	6/26/19 15:00 - 16:32	6/27/19 8:02 - 9:29	6/27/19 12:17 - 13:49	6/27/19 12:25 - 13:59	6/27/19 15:16 - 16:45	6/28/19 10:22 - 11:56
	Temperature Logger Serial #:		206608-9	NA	206609-6, 206609-9	206609-3	206608-8	NA	206609-1
	Odor Intensity Reading:		1.0 - 2.0	1.5 - 2.0	1.5 - 2.0	2.0	1.0 - 1.5	0 - 0.5	2.0
	Moisture Content (%):		65.4	55.4	81.3	63.3	27.9	57.2	54.2
	Caryophyllene	µg/m³	-	-	-	-	-	26	-
	C9H18 Alkane	µg/m³	-	-	-	-	-	-	-
	C10H22 Compound	µg/m³	-	-	-	-	-	-	-
	C11H24 Compound	µg/m³	-	-	-	-	-	-	-
	C12H26 Compound	µg/m³	-	-	-	-	-	-	-
	Decahydro-, Transnaphthalene	µg/m³	-	-	-	-	-	-	-
	1,2,3,4-Tetrahydronaphthalene	µg/m³	-	-	-	-	-	-	-
	3-Methylnonane	µg/m³	-	-	-	-	-	-	-
	Ethyl Esterhexanoic Acid	µg/m³	-	-	-	-	-	-	-
CAS	Compound	Units	Method ASTM 5504 Result	Method ASTM 5504 Result	Method ASTM 5504 Result	Method ASTM 5504 Result	Method ASTM 5504 Result	Method ASTM 5504 Result	Method ASTM 5504 Result
7783-06-4	Hydrogen Sulfide	µg/m³	ND	ND	ND	ND	ND	ND	ND
463-58-1	Carbonyl Sulfide	µg/m³	160	130	32	650	440	26	310
74-93-1	Methyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
75-08-1	Ethyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
75-18-3	Dimethyl Sulfide	µg/m³	1,700	140	200	1,600	4,800	ND	1,500
75-15-0	Carbon Disulfide	µg/m³	1,000	41	40	2,800	3,500	ND	1,900
75-33-2	Isopropyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
75-66-1	tert-Butyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
107-03-9	n-Propyl Mercaptan	µg/m³	16 J	ND	ND	37	ND	ND	ND
624-89-5	Ethyl Methyl Sulfide	µg/m³	ND	ND	ND	ND	ND	ND	ND
110-02-1	Thiophene	µg/m³	ND	ND	ND	ND	ND	ND	ND
513-44-0	Isobutyl Mercaptan	µg/m³	ND	ND	ND	ND	ND	ND	ND
352-93-2	Diethyl Sulfide	µg/m³	ND	ND	ND	ND	ND	ND	ND
109-79-5	n-Butyl Mercaptan	µg/m³	55	ND	ND	96	190	ND	ND
624-92-0	Dimethyl Disulfide	µg/m³	2,900	66	680	4,000	4,200	ND	4,100
616-44-4	3-Methylthiophene	µg/m³	ND	ND	ND	ND	ND	ND	ND
110-01-0	Tetrahydrothiophene	µg/m³	ND	ND	ND	ND	ND	ND	ND
638-02-8	2,5-Dimethylthiophene	µg/m³	54	ND	ND	ND	ND	ND	ND
872-55-9	2-Ethylthiophene	µg/m³	ND	ND	ND	ND	ND	ND	ND
110-81-6	Diethyl Disulfide	µg/m³	ND	ND	ND	ND	ND	ND	ND

Notes:	
1	Only Tentatively Identified Compounds listed in the associated laborator
µg/m³	Micrograms per cubic meter (parts per billion)
MRL	Method Reporting Limit
MDL	Method Detection Limit
ND	Not detected at a concentration at or above the laboratory's MRL (TO-15)
NI	Not identified
NA	Not applicable
D	The reported result is from a dilution.
J	The result is an estimated concentration that is less than the MRL but gre

CAS	Compound	Units																		
	Sample Description:		Review Container In-Situ Day #4			Compost (Disturbed)			MTS Southwest In-Situ Day #1			MTS Hamilton In-Situ Day #1			MTS Southwest In-Situ Day #2			MTS Hamilton In-Situ Day #2		
	Sample Area:		Cell 12 Active Area			Compost Area			Cell 12 Active Area			Cell 12 Active Area			Cell 12 Active Area			Cell 12 Active Area		
	Sample ID:		WM-11196934-062819-MAC-015			WM-11196934-062819-MAC-016			WM-11196934-070219-MAC-017			WM-11196934-070219-MAC-018			WM-11196934-070319-MAC-019			WM-11196934-070319-MAC-020		
	Sample Date / Time:		6/28/19 10:31 - 12:02			6/28/19 13:59 - 15:30			7/02/19 12:00 - 13:30			7/02/19 12:08 - 13:38			7/03/19 10:31 - 12:01			7/03/19 10:35 - 12:05		
	Temperature Logger Serial #:		206609-2			NA			206608-0			206608-1			206608-2			206608-3		
	Odor Intensity Reading:		1.0 - 1.5			0.5 - 1.0			2.0 - 2.5			1.0			2.0 - 2.5			1.0		
	Moisture Content (%):		49.8			62.0			69.6			79.1			58.2			56.9		
	Pile Temperature After Unloading (°F):		80 - 125			[illegible]			79 - 109			82 - 105			85 - 107			82 - 106		
CAS	Compound	Units	Method TO-15 Result			Method TO-15 Result			Method TO-15 Result			Method TO-15 Result			Method TO-15 Result			Method TO-15 Result		
115-07-1	Propene	$\mu g/m^3$	720			30			210		J	160			340		J	540		
75-71-8	Dichlorodifluoromethane (CFC 12)	$\mu g/m^3$		ND		1.8		J		ND			ND			ND			ND	
74-87-3	Chloromethane	$\mu g/m^3$		ND		1.3		J		ND			ND			ND			ND	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
75-01-4	Vinyl Chloride	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
106-99-0	1,3-Butadiene	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
74-83-9	Bromomethane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
75-00-3	Chloroethane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
64-17-5	Ethanol	$\mu g/m^3$	1,400,000		D	12		J	510,000		D	340,000		D, B	1,800,000		B, D	1,000,000		B, D
75-05-8	Acetonitrile	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
107-02-8	Acrolein	$\mu g/m^3$	280		J	3		J	230		J	93		J	460		J	710		J
67-64-1	Acetone	$\mu g/m^3$	15,000			170			9,600			4,900			2,300		J	4,100		
75-69-4	Trichlorofluoromethane (CFC 11)	$\mu g/m^3$		ND		1.3		J	82		J	34		J		ND		470		
67-63-0	2-Propanol (Isopropyl Alcohol)	$\mu g/m^3$	22,000				ND		30,000			18,000			19,000			20,000		
107-13-1	Acrylonitrile	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
75-35-4	1,1-Dichloroethene	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
75-09-2	Methylene Chloride	$\mu g/m^3$		ND			ND		260		J		ND			ND		290		J
107-05-1	3-Chloro-1-propene (Allyl Chloride)	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
76-13-1	Trichlorotrifluoroethane (CFC 113)	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
75-15-0	Carbon Disulfide	$\mu g/m^3$	2,000			2.7		J	360		J	280		J	760		J	970		
156-60-5	trans-1,2-Dichloroethene	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
75-34-3	1,1-Dichloroethane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
1634-04-4	Methyl tert-Butyl Ether	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
108-05-4	Vinyl Acetate	$\mu g/m^3$		ND		20		J		ND			ND			ND			ND	
78-93-3	2-Butanone (MEK)	$\mu g/m^3$	47,000			19			19,000			5,900			14,000			22,000		
156-59-2	cis-1,2-Dichloroethene	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
141-78-6	Ethyl Acetate	$\mu g/m^3$	54,000			86			12,000			6,600			28,000			30,000		
110-54-3	n-Hexane	$\mu g/m^3$		ND		7.4		J		ND		47		J	110		J	99		J
67-66-3	Chloroform	$\mu g/m^3$	71		J		ND			ND			ND			ND			ND	
109-99-9	Tetrahydrofuran (THF)	$\mu g/m^3$	570				ND			ND			ND			ND			ND	
107-06-2	1,2-Dichloroethane	$\mu g/m^3$	510				ND		83		J	38		J		ND			ND	
71-55-6	1,1,1-Trichloroethane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
71-43-2	Benzene	$\mu g/m^3$		ND		5		J		ND			ND			ND		58		J
56-23-5	Carbon Tetrachloride	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
110-82-7	Cyclohexane	$\mu g/m^3$		ND		17				ND			ND			ND			ND	
78-87-5	1,2-Dichloropropane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
75-27-4	Bromodichloromethane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
79-01-6	Trichloroethene	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
123-91-1	1,4-Dioxane	$\mu g/m^3$		ND		4.2		J		ND			ND			ND			ND	
80-62-6	Methyl Methacrylate	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
142-82-5	n-Heptane	$\mu g/m^3$	790			18			240		J	58		J	250		J	170		J
10061-01-5	cis-1,3-Dichloropropene	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
108-10-1	4-Methyl-2-pentanone	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
10061-02-6	trans-1,3-Dichloropropene	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
79-00-5	1,1,2-Trichloroethane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
108-88-3	Toluene	$\mu g/m^3$	540			30			1,200			91		J	250		J	300		J
591-78-6	2-Hexanone	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
124-48-1	Dibromochloromethane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
106-93-4	1,2-Dibromoethane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
123-86-4	n-Butyl Acetate	$\mu g/m^3$	850				ND		300		J	430			460			630		
111-65-9	n-Octane	$\mu g/m^3$	790			110			230		J	100		J	280		J	340		J
127-18-4	Tetrachloroethene	$\mu g/m^3$		ND			ND			ND		23		J	62		J	580		
108-90-7	Chlorobenzene	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
100-41-4	Ethylbenzene	$\mu g/m^3$	3,000			9.5			150		J	82		J	230		J	210		J
179601-23-1	m,p-Xylenes	$\mu g/m^3$	9,300			20			600		J	110		J	150		J	330		J
75-25-2	Bromoform	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
100-42-5	Styrene	$\mu g/m^3$	610				ND		290		J	190			970			490		
95-47-6	o-Xylene	$\mu g/m^3$	5,700			56			120		J	45		J	62		J	140		J
111-84-2	n-Nonane	$\mu g/m^3$	15,000			590			470			63		J	140		J	1,800		
79-34-5	1,1,2,2-Tetrachloroethane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
98-82-8	Cumene	$\mu g/m^3$	130		J	37				ND			ND			ND			ND	
80-56-8	alpha-Pinene	$\mu g/m^3$	3,200			60			770			740			910			2,000		
103-65-1	n-Propylbenzene	$\mu g/m^3$	440			34				ND			ND			ND			ND	
622-96-8	4-Ethyltoluene	$\mu g/m^3$	570				ND			ND			ND			ND		75		J
108-67-8	1,3,5-Trimethylbenzene	$\mu g/m^3$	530			19				ND			ND			ND		80		J
95-63-6	1,2,4-Trimethylbenzene	$\mu g/m^3$	1,500			340			72		J		ND			ND		170		J
100-44-7	Benzyl Chloride	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
541-73-1	1,3-Dichlorobenzene	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
106-46-7	1,4-Dichlorobenzene	$\mu g/m^3$	140		J		ND			ND			ND			ND		230		J
95-50-1	1,2-Dichlorobenzene	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	
5989-27-5	d-Limonene	$\mu g/m^3$	25,000				ND		8,500			5,100			18,000			32,000		
96-12-8	1,2-Dibromo-3-chloropropane	$\mu g/m^3$		ND			ND			ND			ND			ND			ND	

		Sample Description:	Review Container In-Situ Day #4	Compost (Disturbed)	MTS Southwest In-Situ Day #1	MTS Hamilton In-Situ Day #1	MTS Southwest In-Situ Day #2	MTS Hamilton In-Situ Day #2
		Sample Area:	Cell 12 Active Area	Compost Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area	Cell 12 Active Area
		Sample ID:	WM-11196934-062819-MAC-015	WM-11196934-062819-MAC-016	WM-11196934-070219-MAC-017	WM-11196934-070219-MAC-018	WM-11196934-070319-MAC-019	WM-11196934-070319-MAC-020
		Sample Date / Time:	6/28/19 10:31 - 12:02	6/28/19 13:59 - 15:30	7/02/19 12:00 - 13:30	7/02/19 12:08 - 13:38	7/03/19 10:31 - 12:01	7/03/19 10:35 - 12:05
		Temperature Logger Serial #:	206609-2	NA	206608-0	206608-1	206608-2	206608-3
		Odor Intensity Reading:	1.0 - 1.5	0.5 - 1.0	2.0 - 2.5	1.0	2.0 - 2.5	1.0
		Moisture Content (%):	49.8	62.0	69.6	79.1	58.2	56.9
120-82-1	1,2,4-Trichlorobenzene	µg/m³	ND	ND	ND	ND	ND	ND
91-20-3	Naphthalene	µg/m³	ND	ND	ND	ND	ND	ND
87-68-3	Hexachlorobutadiene	µg/m³	ND	ND	ND	ND	ND	ND
Tentatively Identfied Compounds [1]								
CAS	Compound	Units	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result	Method TO-15 Result
	Propane	µg/m³	-	-	-	-	-	-
	Dimethyl Ether	µg/m³	110,000	-	-	-	3,800	-
	Isobutane	µg/m³	39,000	-	13,000	6,600	23,000	23,000
	n-Butane	µg/m³	26,000	-	2,200	1,200	6,000	4,700
	1,1-Dichloro-1-fluoroethane	µg/m³	-	-	-	-	-	-
	n-Pentane	µg/m³	24,000	-	3,800	3,800	9,700	9,600
	2-Butanol	µg/m³	100,000	-	-	35,000	130,000	140,000
	Isobutanol	µg/m³	2,300	-	-	790	2,100	2,100
	2-Methylhexane	µg/m³	-	-	-	-	-	-
	3-Methylhexane	µg/m³	-	-	-	-	-	-
	Acetoin	µg/m³	-	-	-	-	-	-
	3-Methyl-1-butanol	µg/m³	-	-	-	-	-	-
	Methylcyclohexane	µg/m³	-	-	-	-	-	-
	Dimethyl disulfide	µg/m³	-	-	1,500	-	2,200	1,800
	.beta.-Myrcene	µg/m³	-	-	-	-	-	-
	beta-Pinene	µg/m³	3,600	-	-	870	-	2,500
	(+)-3-Carene	µg/m³	-	-	-	-	-	-
	1,2,3,4-Tetramethylbenzene	µg/m³	-	-	-	-	-	-
	.gamma.-Terpinene	µg/m³	2,800	-	-	-	-	-
	unknown Siloxane	µg/m³	-	-	-	-	-	-
	2-Methylbutane	µg/m³	-	-	-	-	13,000	24,000
	1-Propanol	µg/m³	22,000	-	32,000	13,000	60,000	66,000
	Hexamethyldisiloxane	µg/m³	-	-	-	-	-	-
	n-Hexanal	µg/m³	-	-	-	-	-	-
	unknown hydrocarbon	µg/m³	-	1,800	-	-	-	-
	Dimethyl Sulfide	µg/m³	-	-	-	-	-	-
	n-Dodecane	µg/m³	-	2,000	-	-	-	-
	n-Tridecane	µg/m³	-	370	-	-	-	-
	n-Tetradecane	µg/m³	-	-	-	-	-	-
	n-Decane	µg/m³	14,000	2,100	-	-	-	2,300
	(C11H24) Alkane: Branched	µg/m³	-	-	-	-	-	-
	5-Methyldecane	µg/m³	-	-	-	-	-	-
	3-Methyldecane	µg/m³	-	-	-	-	-	-
	n-Undecane	µg/m³	-	890	-	-	-	-
	unknown Siloxane	µg/m³	-	-	-	-	2,400	-
	Methyl Acetate	µg/m³	-	-	-	-	-	-
	1-Butanol	µg/m³	9,800	-	8,300	6,600	16,000	16,000
	Hexamethylcyclotrisiloxane	µg/m³	-	-	1,700	720	1,800	2,200
	N,N-Dimethylmethylamine	µg/m³	-	-	-	-	-	-
	(R)-2-butanol	µg/m³	-	-	63,000	-	-	-
	2,5-Dimethylheptane	µg/m³	-	670	-	-	-	-
	2,3-Dimethylheptane	µg/m³	-	510	-	-	-	-
	Propylcyclohexane	µg/m³	7,500	410	-	-	-	-
	Dimethyl trisulfide	µg/m³	-	-	-	-	-	-
	2-Ethyl-1-hexanol	µg/m³	-	-	-	-	-	-
	4,4-Dimethyl-1-pentene	µg/m³	-	-	-	-	-	-
	unknown	µg/m³	4000 - 8,000	540 - 890	-	-	-	-
	Ethyl Butyrate	µg/m³	4,200	-	2,300	950	3,200	4,800
	Acetaldehyde	µg/m³	-	-	-	-	-	-
	Cyclopentane	µg/m³	-	-	-	-	-	-
	2-Pentylfuran	µg/m³	-	-	-	-	-	-
	2,2,4-Trimethylpentane	µg/m³	-	-	-	-	-	-
	p-Isopropyltoluene	µg/m³	-	-	-	-	-	-
	1,1-Difluoroethane	µg/m³	-	-	-	-	-	-
	Ethyl ester propanoic acid	µg/m³	-	-	-	-	-	-
	n-Propyl acetate	µg/m³	-	-	-	-	-	2,600
	Ethyl Hexanoate	µg/m³	-	-	-	-	-	-
	C9H18 hydrocarbon	µg/m³	-	-	-	-	-	-
	2-Methylpropanal	µg/m³	-	-	-	-	-	-
	Methacrolein	µg/m³	-	-	-	-	-	-
	2,3-Butanedione	µg/m³	-	-	-	-	-	-
	3-Methylfuran	µg/m³	-	-	-	-	-	-
	3-Methylbutanal	µg/m³	-	-	-	-	-	-
	n-Pentanal	µg/m³	-	-	-	-	-	-
	Camphene	µg/m³	-	-	-	-	-	-
	6-Methyl-5-hepten-2-one	µg/m³	-	-	-	-	-	-
	n-Nonanal	µg/m³	-	-	-	-	-	-
	Copaene	µg/m³	-	-	-	-	-	-

	Sample Description:		Review Container In-Situ Day #4		Compost (Disturbed)		MTS Southwest In-Situ Day #1		MTS Hamilton In-Situ Day #1		MTS Southwest In-Situ Day #2		MTS Hamilton In-Situ Day #2	
	Sample Area:		Cell 12 Active Area		Compost Area		Cell 12 Active Area		Cell 12 Active Area		Cell 12 Active Area		Cell 12 Active Area	
	Sample ID:		WM-11196934-062819-MAC-015		WM-11196934-062819-MAC-016		WM-11196934-070219-MAC-017		WM-11196934-070219-MAC-018		WM-11196934-070319-MAC-019		WM-11196934-070319-MAC-020	
	Sample Date / Time:		6/28/19 10:31 - 12:02		6/28/19 13:59 - 15:30		7/02/19 12:00 - 13:30		7/02/19 12:08 - 13:38		7/03/19 10:31 - 12:01		7/03/19 10:35 - 12:05	
	Temperature Logger Serial #:		206609-2		NA		206608-0		206608-1		206608-2		206608-3	
	Odor Intensity Reading:		1.0 - 1.5		0.5 - 1.0		2.0 - 2.5		1.0		2.0 - 2.5		1.0	
	Moisture Content (%):		49.8		62.0		69.6		79.1		58.2		56.9	
	Caryophyllene	μg/m³	-		-		-		-		-		-	
	C9H18 Alkane	μg/m³	3,900		-		-		-		-		-	
	C10H22 Compound	μg/m³	2200 - 6,700		360 - 590		-		-		-		-	
	C11H24 Compound	μg/m³	2,900 - 4,000		470		-		-		-		-	
	C12H26 Compound	μg/m³	-		340 - 700		-		-		-		-	
	Decahydro-, Transnaphthalene	μg/m³	-		940		-		-		-		-	
	1,2,3,4-Tetrahydronaphthalene	μg/m³	-		390		-		-		-		-	
	3-Methylnonane	μg/m³	-		-		-		-		-		1,900	
	Ethyl Esterhexanoic Acid	μg/m³	-		-		-		-		-		2,400	
CAS	Compound	Units	Method ASTM 5504 Result		Method ASTM 5504 Result		Method ASTM 5504 Result		Method ASTM 5504 Result		Method ASTM 5504 Result		Method ASTM 5504 Result	
7783-06-4	Hydrogen Sulfide	μg/m³		ND		ND		ND		ND		ND		ND
463-58-1	Carbonyl Sulfide	μg/m³	420		18		59		33		220		230	
74-93-1	Methyl Mercaptan	μg/m³		ND		ND		ND		ND		ND		ND
75-08-1	Ethyl Mercaptan	μg/m³		ND		ND		ND		ND		ND		ND
75-18-3	Dimethyl Sulfide	μg/m³	2,500		31		370		340		1,100		1,100	
75-15-0	Carbon Disulfide	μg/m³	3,300		29		370		400		1,600		2,100	
75-33-2	Isopropyl Mercaptan	μg/m³		ND		ND		ND		ND		ND		ND
75-66-1	tert-Butyl Mercaptan	μg/m³		ND		ND		ND		ND		ND		ND
107-03-9	n-Propyl Mercaptan	μg/m³		ND		ND		ND		ND	25		32	
624-89-5	Ethyl Methyl Sulfide	μg/m³		ND		ND		ND		ND		ND		ND
110-02-1	Thiophene	μg/m³		ND		ND		ND		ND		ND		ND
513-44-0	Isobutyl Mercaptan	μg/m³		ND		ND		ND		ND		ND		ND
352-93-2	Diethyl Sulfide	μg/m³		ND		ND		ND		ND		ND		ND
109-79-5	n-Butyl Mercaptan	μg/m³	73			ND		ND		ND	50			ND
624-92-0	Dimethyl Disulfide	μg/m³	4,700			ND	1,900		520		5,900		5,200	
616-44-4	3-Methylthiophene	μg/m³		ND		ND		ND		ND		ND		ND
110-01-0	Tetrahydrothiophene	μg/m³		ND		ND		ND		ND		ND		ND
638-02-8	2,5-Dimethylthiophene	μg/m³		ND		ND		ND		ND	31	J		ND
872-55-9	2-Ethylthiophene	μg/m³		ND		ND		ND		ND		ND		ND
110-81-6	Diethyl Disulfide	μg/m³		ND		ND		ND		ND		ND		ND

Notes:	
1	Only Tentatively Identified Compounds listed in the associated laborator
μg/m³	Micrograms per cubic meter (parts per billion)
MRL	Method Reporting Limit
MDL	Method Detection Limit
ND	Not detected at a concentration at or above the laboratory's MRL (TO-15)
NI	Not identified
NA	Not applicable
D	The reported result is from a dilution.
J	The result is an estimated concentration that is less than the MRL but gre

Figure 1 - Analytical Results: Ethanol

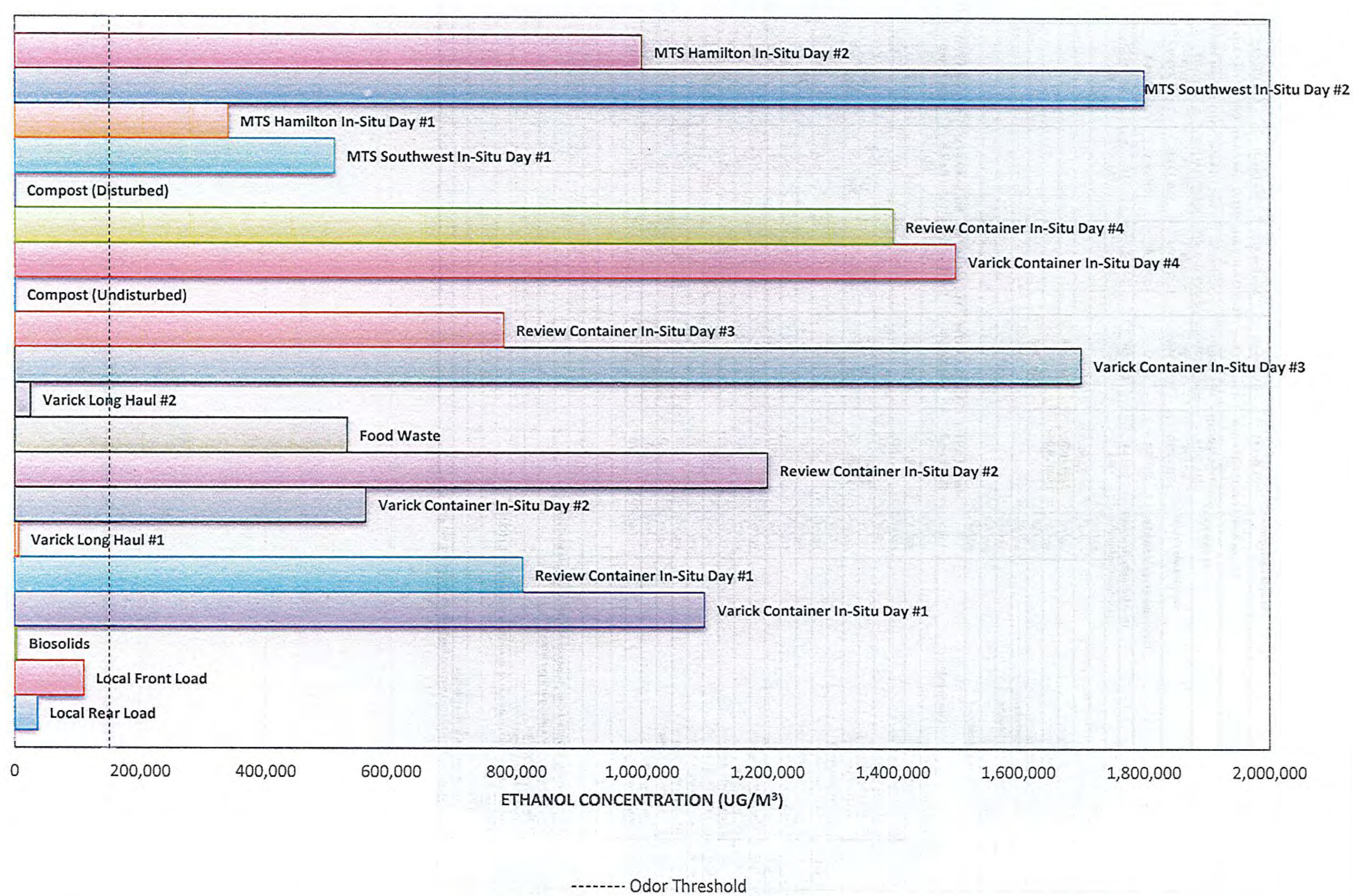


Figure 2 - Analytical Results: D-Limonene

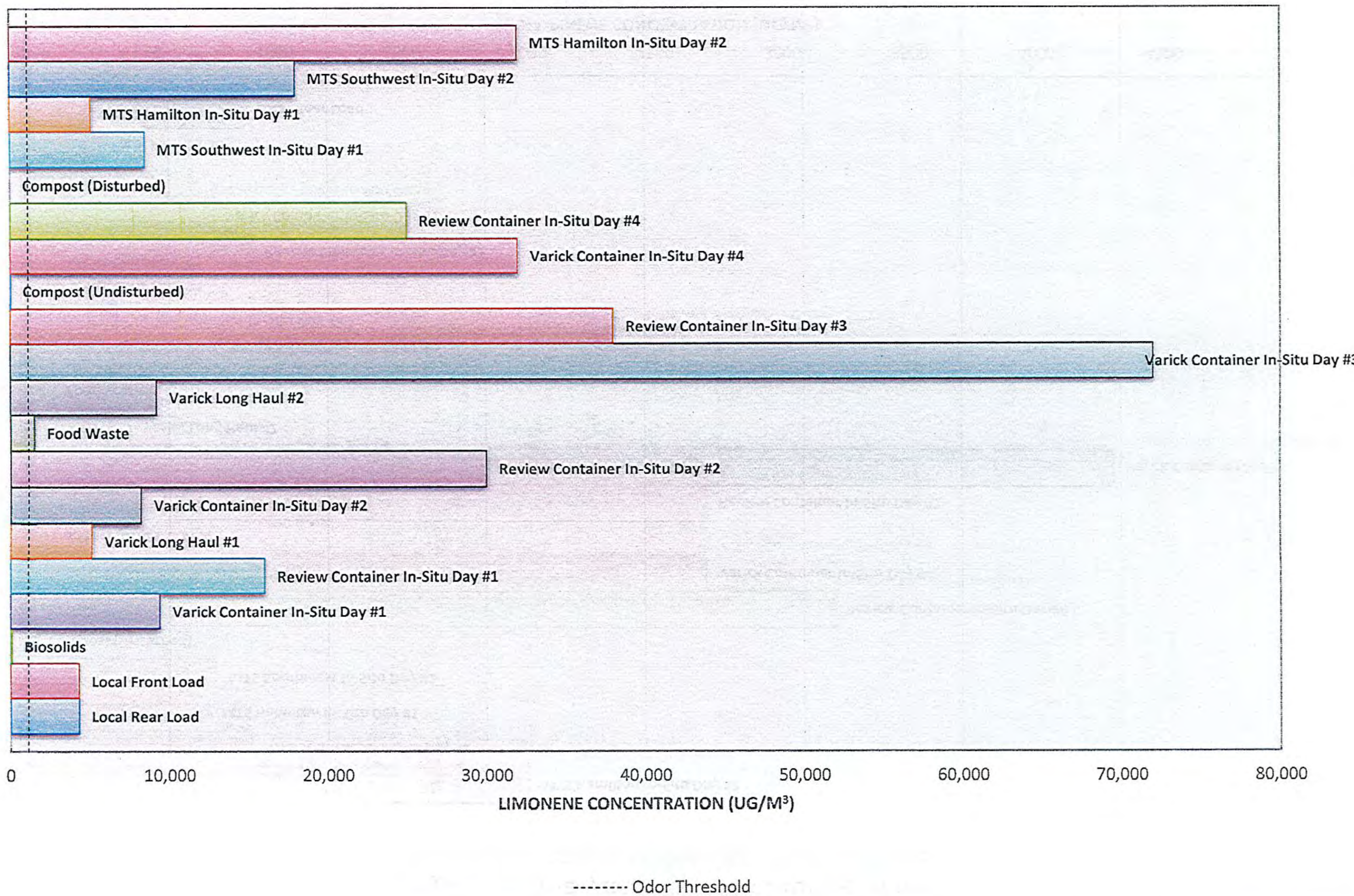


Figure 3 - Analytical Results: Alpha-pinene

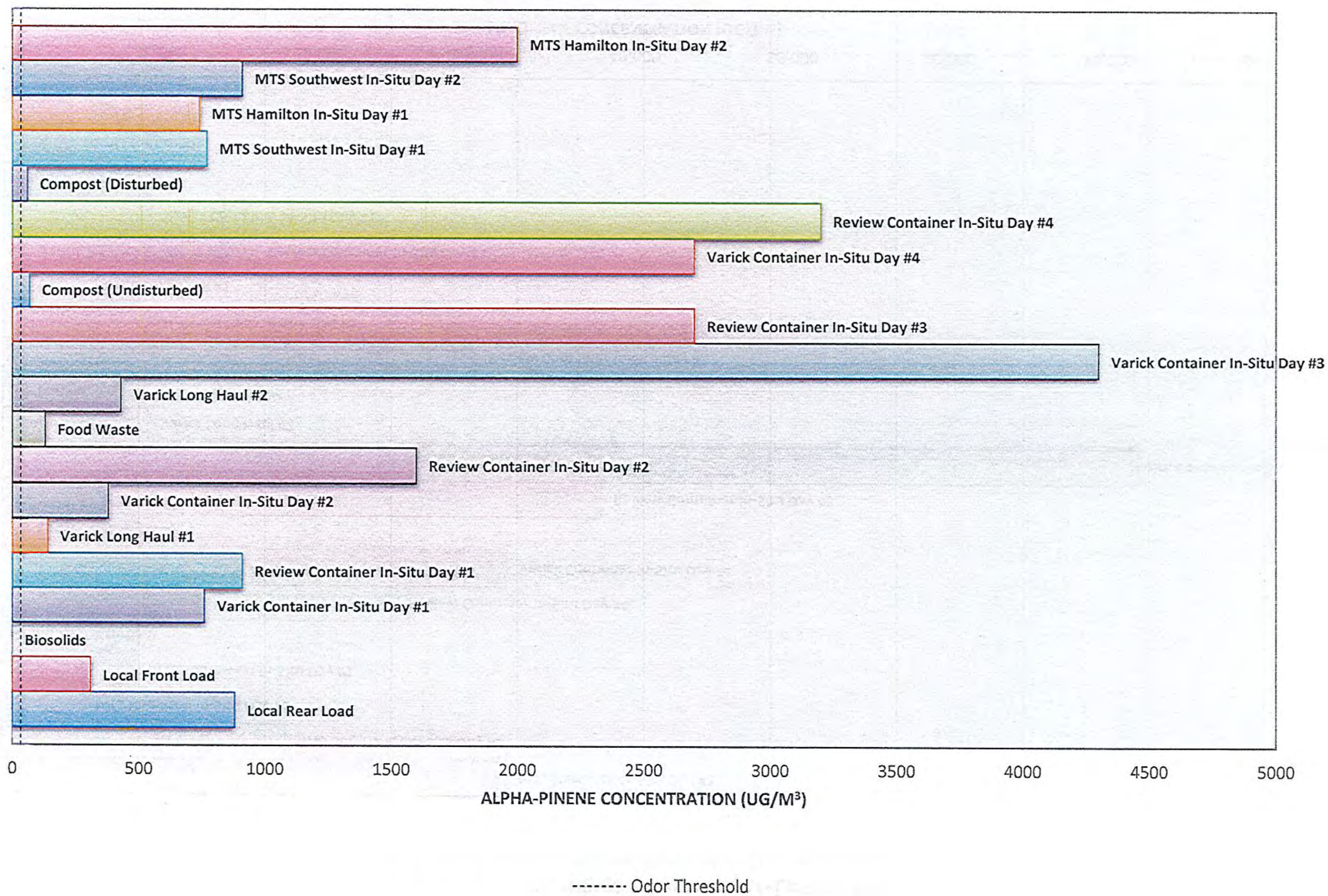


Figure 4 - Analytical Results: Dimethyl Sulfide

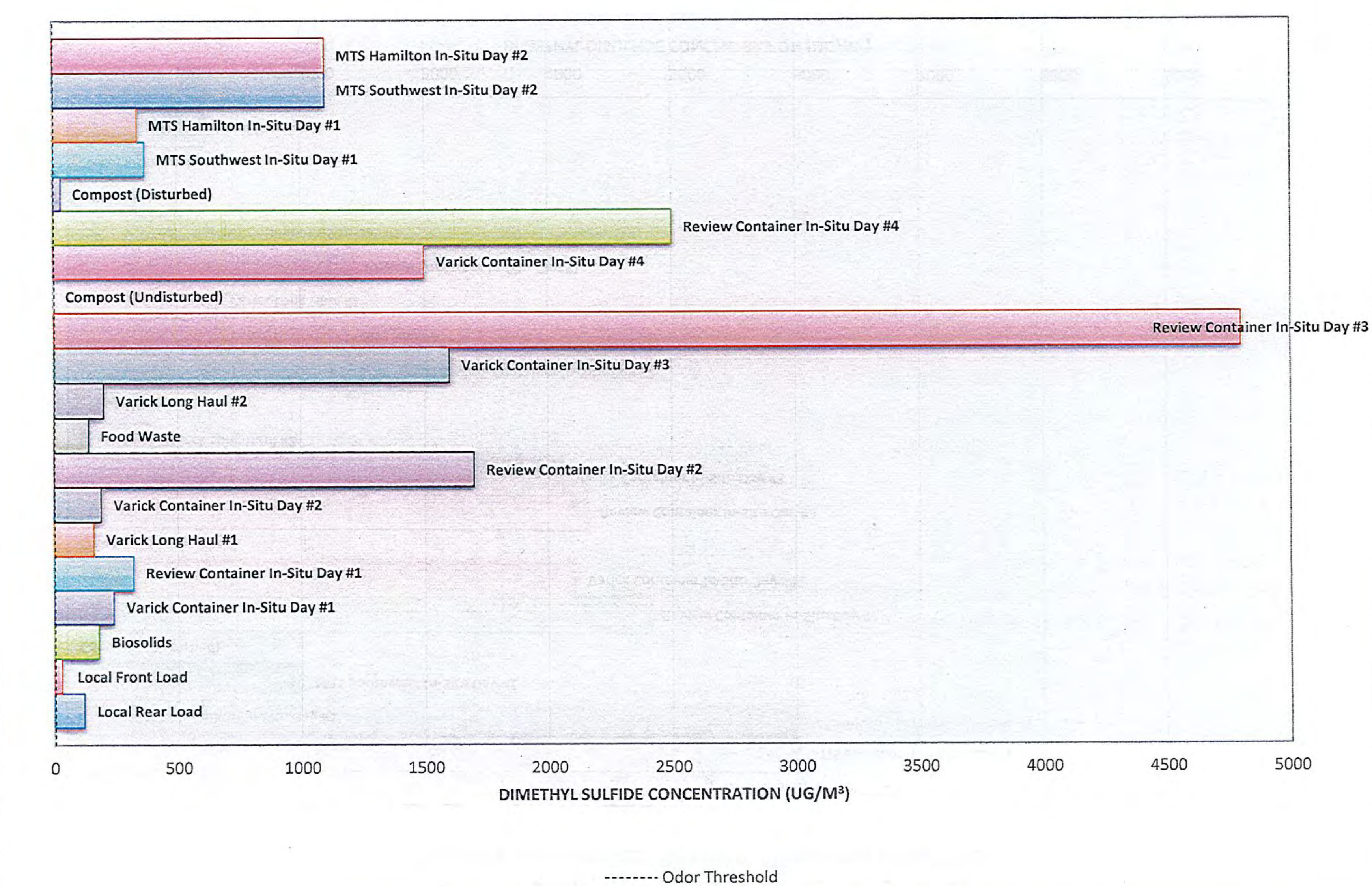


Figure 5 - Analytical Results: Dimethyl Disulfide

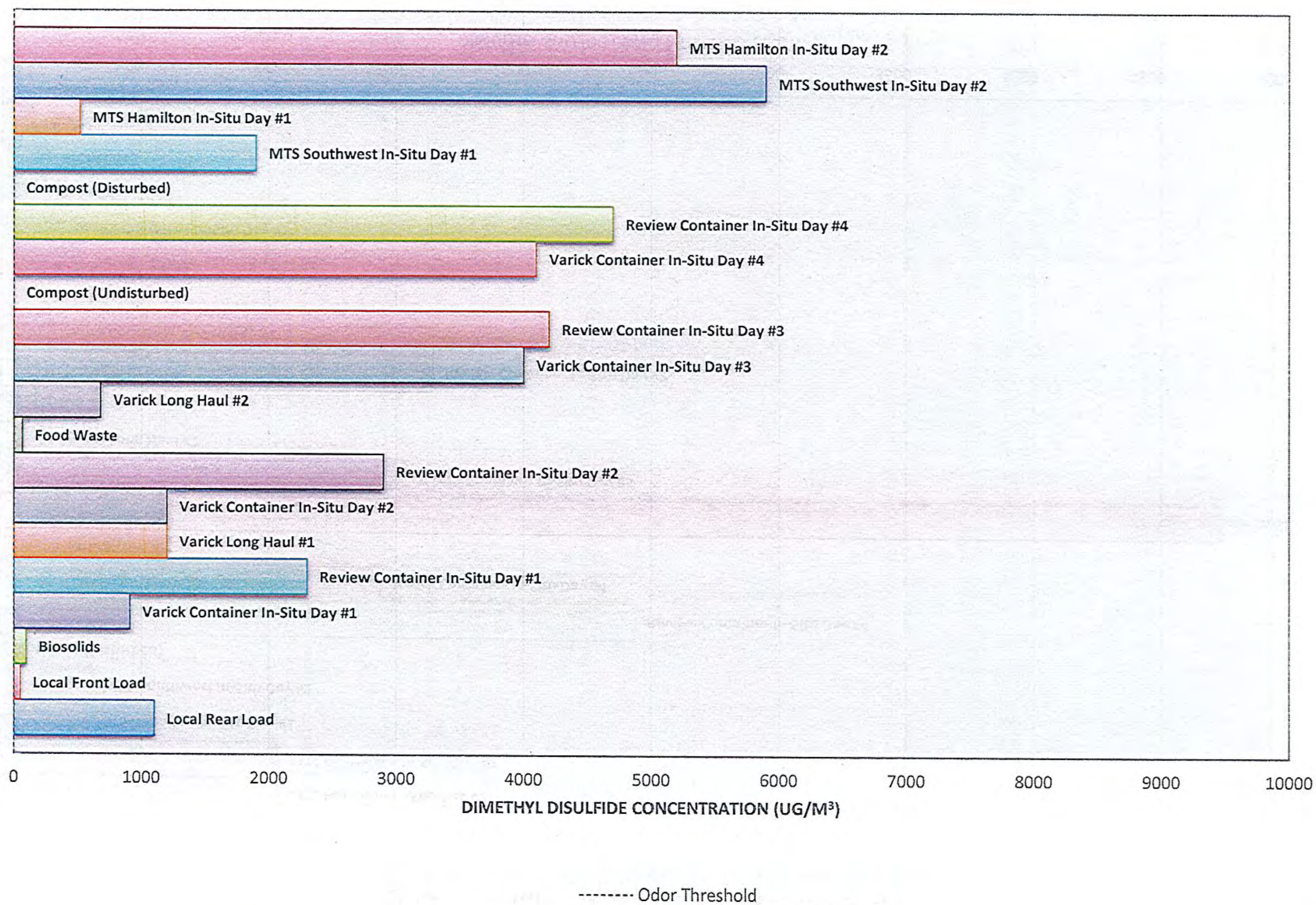


Figure 6 - Analytical Results: Acetone

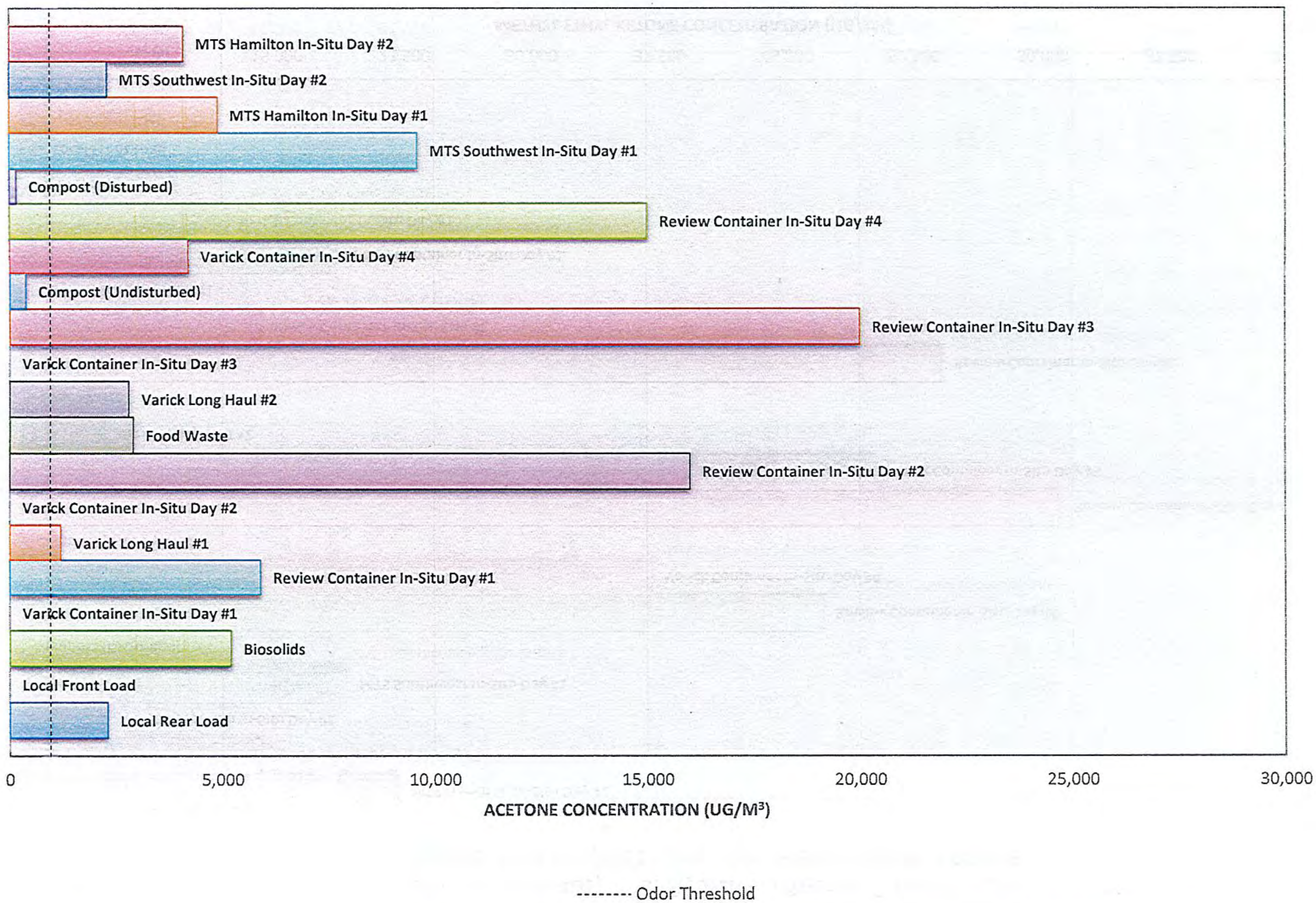


Figure 7 - Analytical Results: Methyl Ethyl Ketone

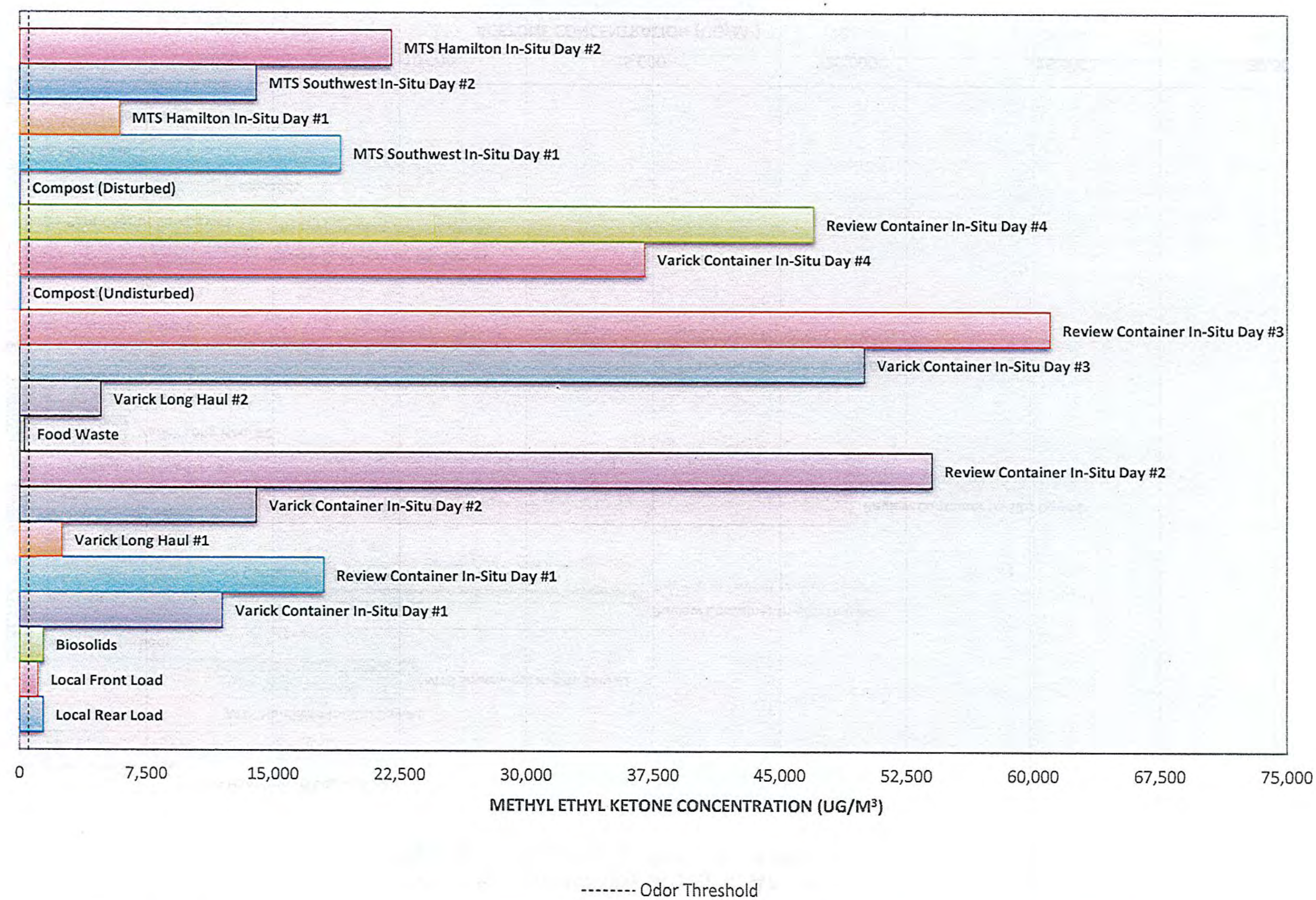


Figure 8 - Analytical Results: Ethyl Acetate

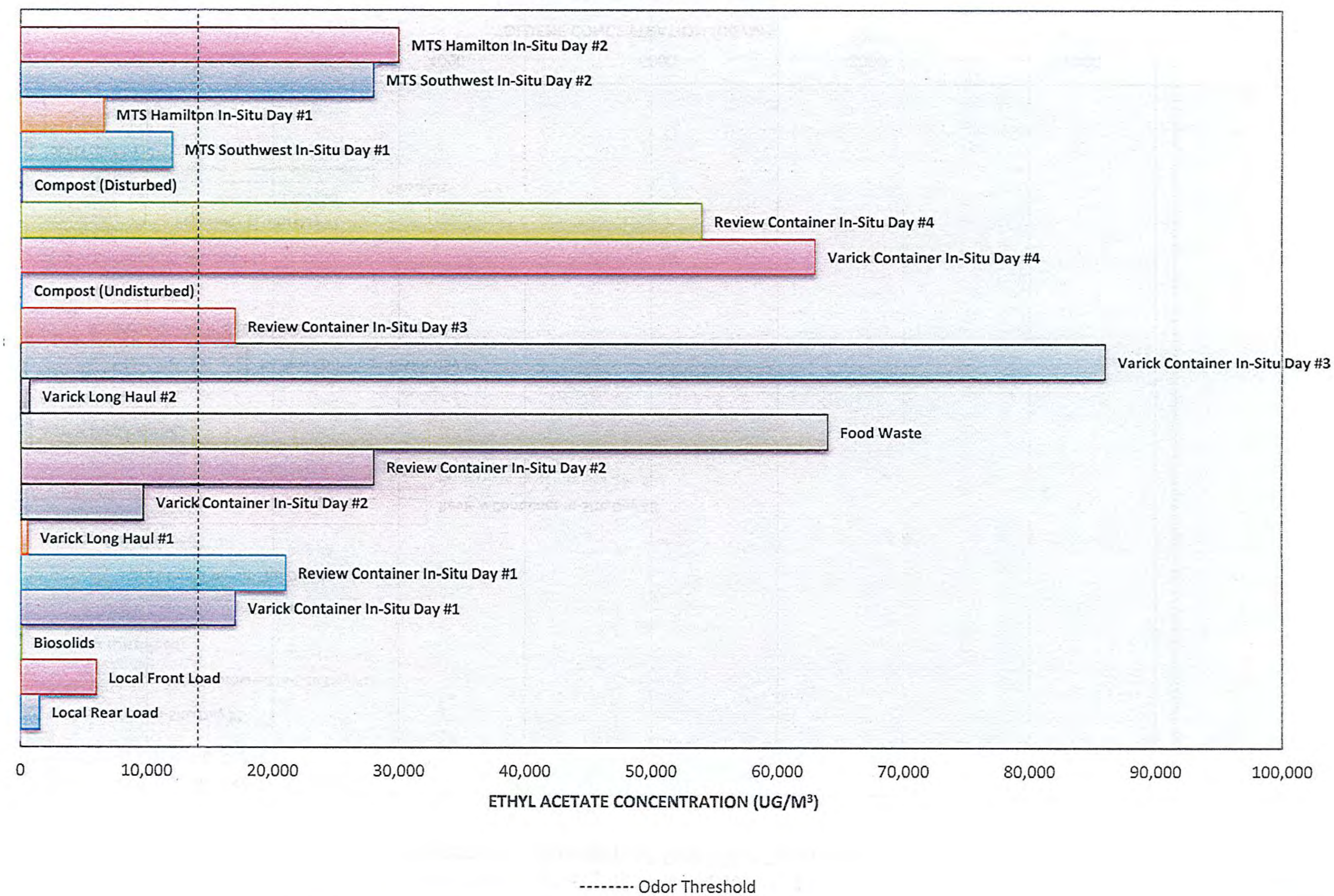


Figure 9 - Analytical Results: Toluene

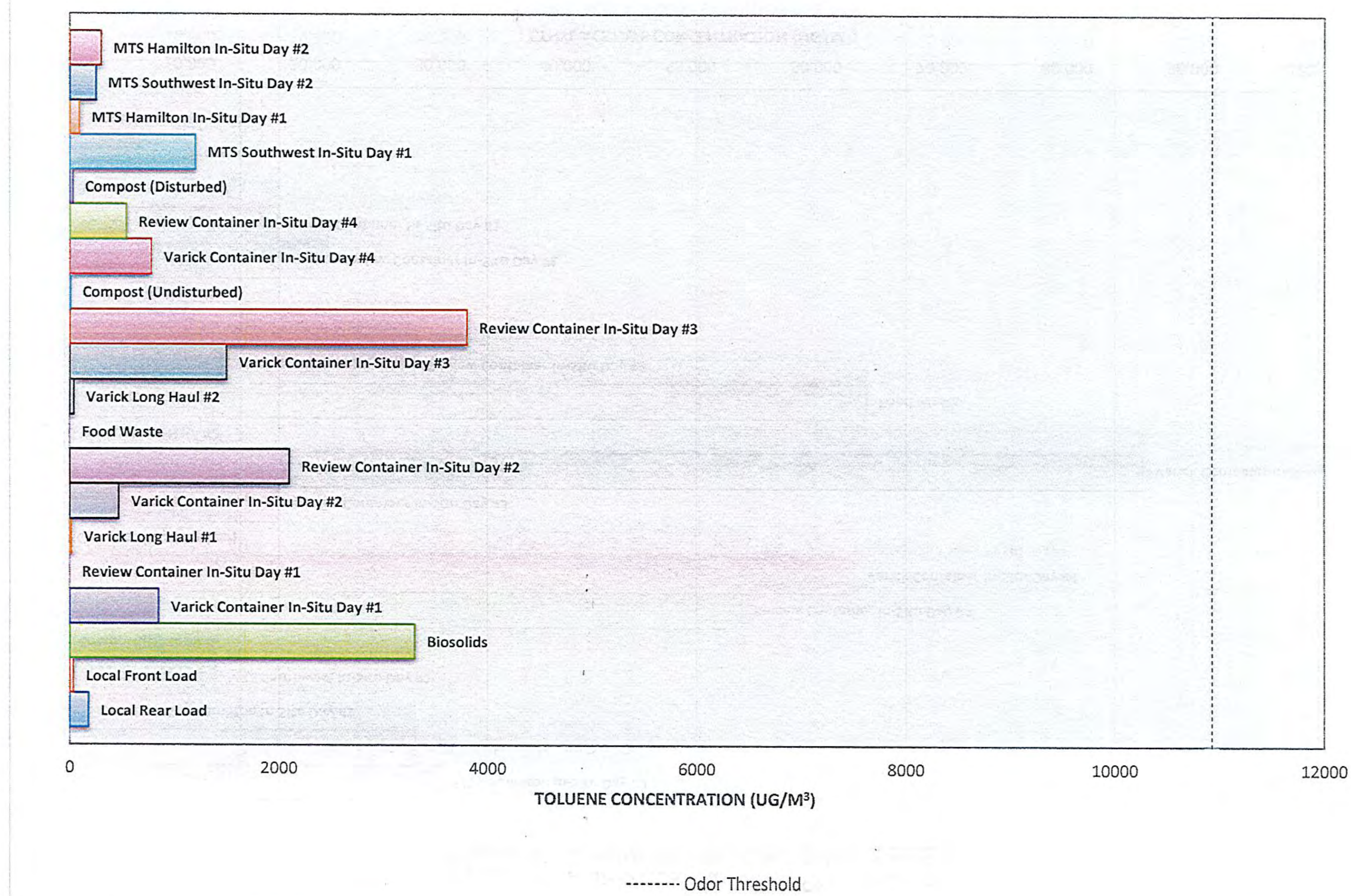
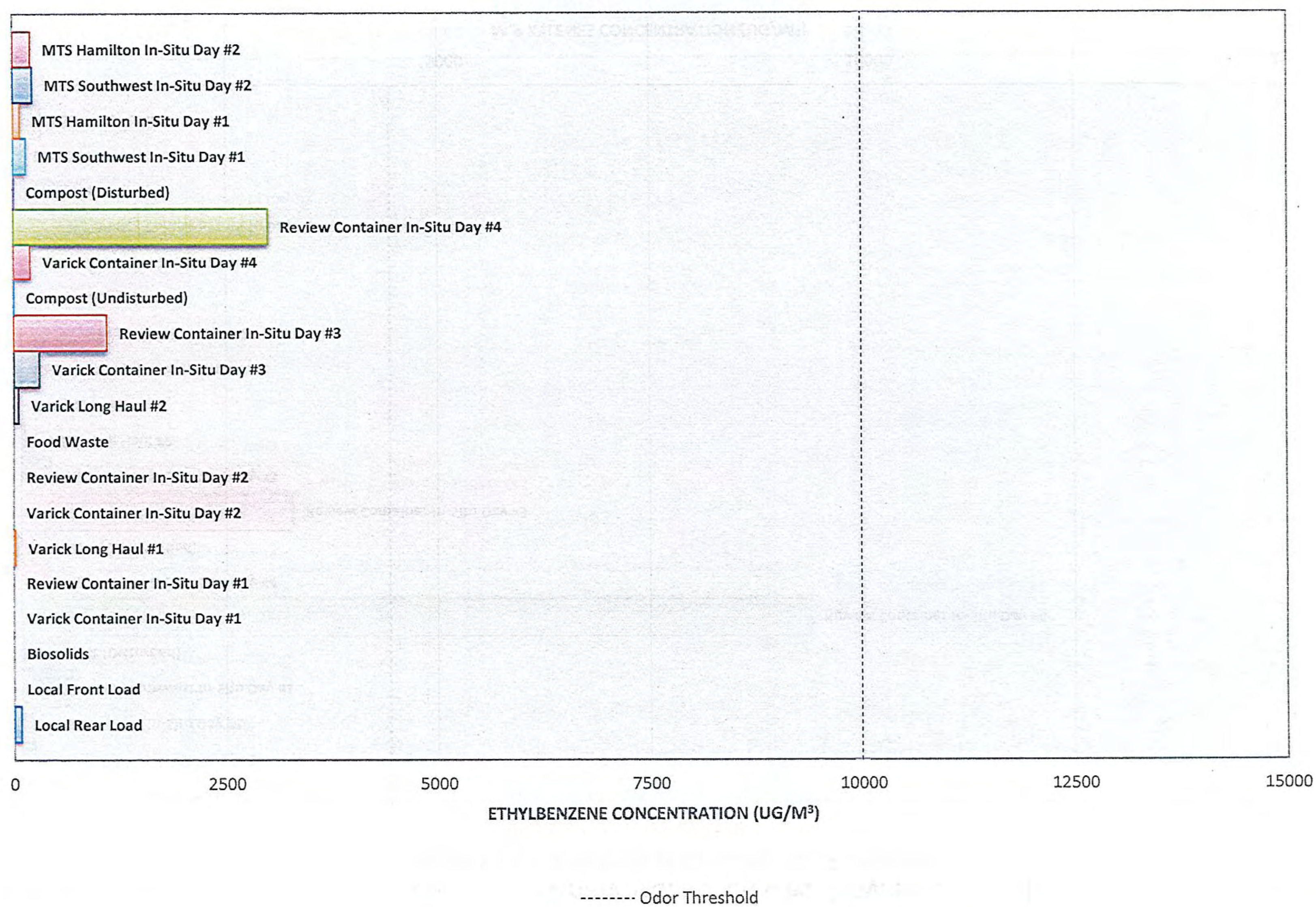


Figure 10 - Analytical Results: Ethylbenzene



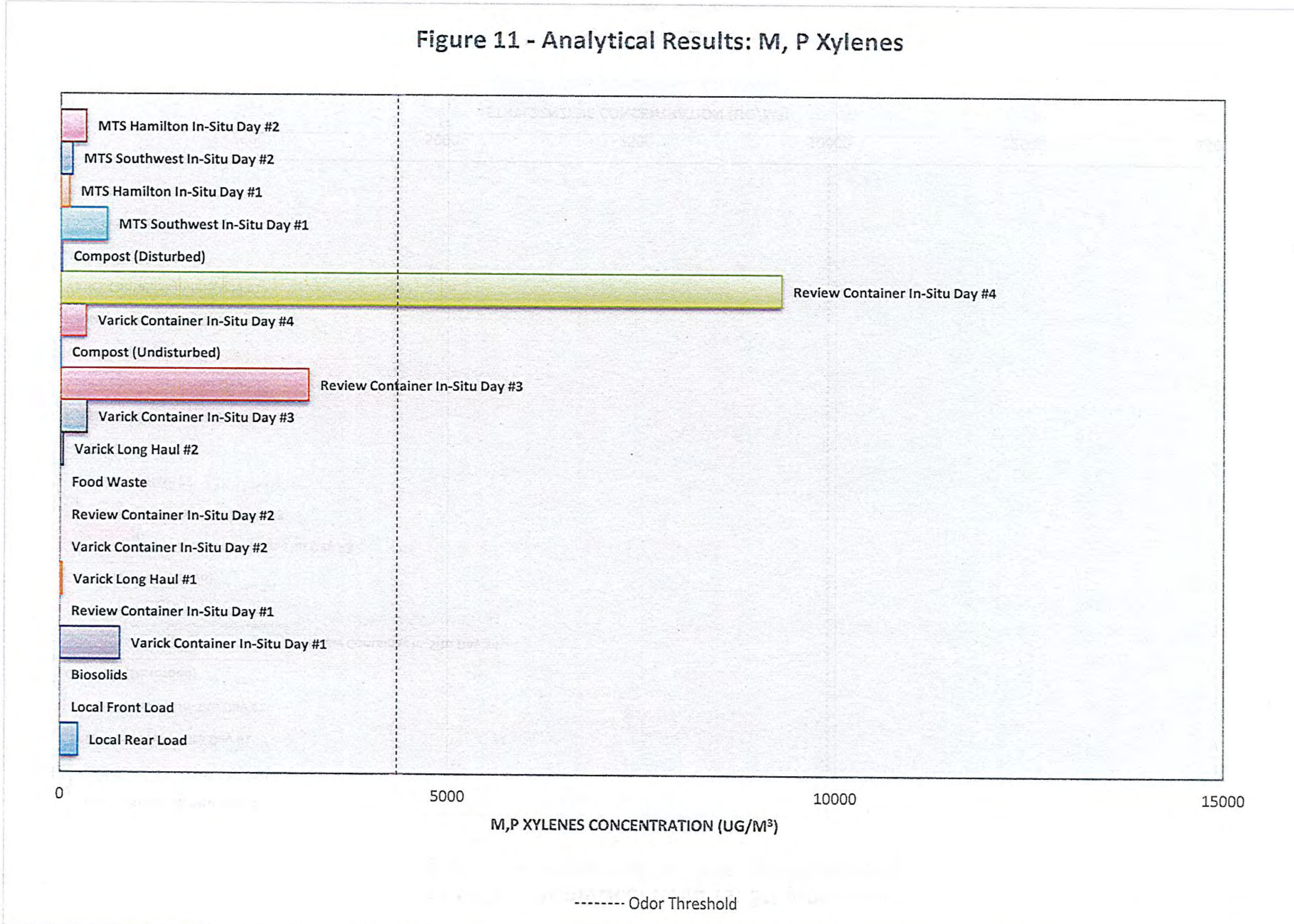
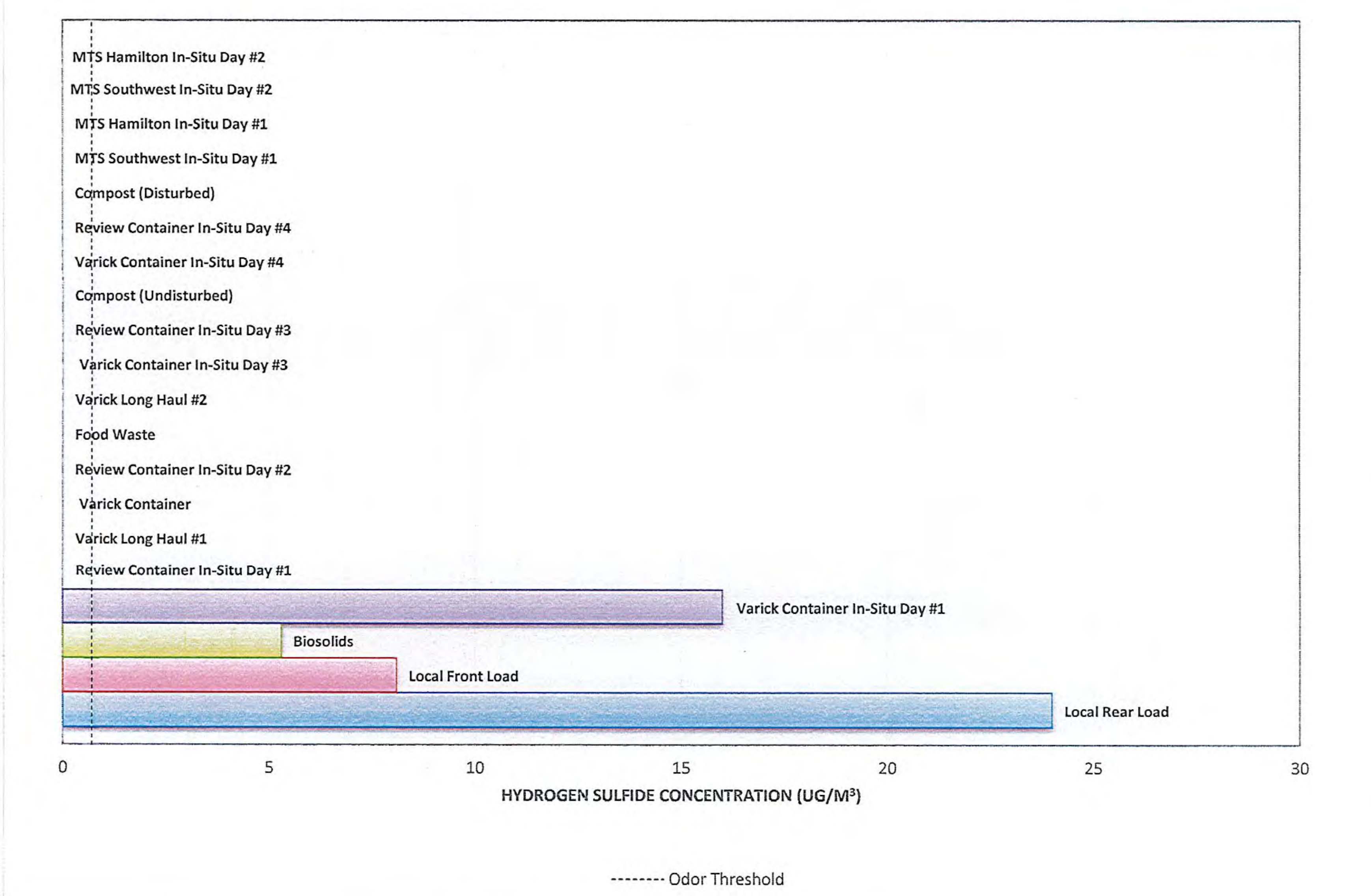


Figure 11 - Analytical Results: M, P Xylenes
MTS Hamilton In-Situ Day #2
MTS Southwest In-Situ Day #2
MTS Hamilton In-Situ Day #1
MTS Southwest In-Situ Day #1
Compost (Disturbed)
Review Container In-Situ Day #4
Varick Container In-Situ Day #4
Compost (Undisturbed)
Review Container In-Situ Day #3
Varick Container In-Situ Day #3
Varick Long Haul #2
Food Waste
Review Container In-Situ Day #2
Varick Container In-Situ Day #2
Varick Long Haul #1
Review Container In-Situ Day #1
Varick Container In-Situ Day #1
Biosolids
Local Front Load
Local Rear Load
0
5000
10000
15000
M,P XYLENES CONCENTRATION (UG/M³)
-------- Odor Threshold

Figure 12 - Analytical Results: Hydrogen Sulfide



47-15-1A (1/98)-q
(Automated 6/07)

NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS
6 NYCRR Part 360-2
SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT

(For use at Mixed Solid Waste Landfills, Industrial /Commercial Waste Monofills, or Ash Residue Monofills)

FACILITY NAME: High Acres Landfill	LOCATION: Perinton(T), Monroe(C)	FACILITY ID#: 28 S 32	DATE: 06/24/19	TIME:
INSPECTOR'S NAME: Dave Kay	CODE: M	PERSONS INTERVIEWED: Pat O'Dell		
REGION 8	WEATHER CONDITIONS: CL, lt. pm rain; 60's-70's°F; W: 0-5+ S,SE.ESE,SSE	DEC PERMIT NUMBER 8 - 9908 - 00162 / 00032		
SHEET 1 OF 2	CONTINUATION SHEET ☒YES ☐NO	PART(S) 360- attached		

Violations of Part 360 are Subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in ECL Article 71 and as Appropriate, the Clean Water and Air Acts. Additional and/or Multiple Violations May be Described on the Attached Continuation Sheet. This form is a record of conditions which are observed in the field at the time of inspection. Items marked NI Indicate No Inspection and do not mean no violation has occurred.

☒ PART 360 PERMIT ☐ ORDER ON CONSENT ☐ REGISTERED ☐ EXEMPT ☐ COMPLAINT ☐ CLOSED

C	NI	V	
			FACILITY MANAGEMENT
☒	☐	☐	1. Solid waste management facility is authorized and management occurs within approved area. 360-1.7(a) (1), (b), 360-1.8(h) (5)
			2. Incoming waste is monitored by a control program for unauthorized waste and solid waste material accepted are approved for management at the facility 360-1.14(e) (1)
☐	☒	☐	a. Hazardous/Low Level Radioactive Wastes 360-1.5(b), 360-2.17(m)
☒	☐	☐	b. Control Program. 360-1.14(e) (1)
☒	☐	☐	c. Department Approved Facility for Specific Wastes 360-1.14(r)
☒	☐	☐	d Bulk Liquids 360-2.17 (k)
☒	☐	☐	e. Whole Tires 360-2.17(v)
☒	☐	☐	f. Lead Acid Batteries 360-2.17 (w)
			3. Operator maintains and operates facility components and equipment in accordance with the permit and their intended use.
☒	☐	☐	a. Maintenance of Facility Components/Site Grading. 360-1.14(f) (1); 360-2.17 (h), (u)
☒	☐	☐	b. Adequate Equipment. 360-1.14(f) (2)
			4. Operational Records are available where required:
☐	☒	☐	a. Unauthorized Solid Waste Records. 360-1.14(i) (1)
☐	☒	☐	b. Self Inspection Records. 360-1.14(i) (2)
☐	☒	☐	c. Permit Application Records. 360-1.14(i) (3)
☐	☒	☐	d. Monitoring Records. 360-1.14(i) (4)
☐	☒	☐	e. Facility Operator Records. 360-1.14(u) (1)
☐	☒	☐	f. Fill Progression Records. 360-2.9 (e)
☐	☒	☐	g. Primary Leachate Collection and Removal System Logs 260-2.9(j) (3)
☐	☒	☐	h. Asbestos Waste Site Plan 360-2.17 (p) (2)
☐	☒	☐	i. Random waste collection vehicle inspection records 260-2.17(q)
			OPERATION CONTROL
☒	☐	☐	5. Solid waste, including blowing litter, is sufficiently confined and controlled. 360-1.14(j)
☒	☐	☐	6. Dust is effectively controlled and does not constitute an offsite nuisance 360-1.14(k)
☒	☐	☐	7. On-Site vector populations are prevented or controlled, and vector breeding areas are prevented 360-1.14(l)
☐	☒	☐	8. Odors are effectively controlled so that they do not constitute a nuisance. 360-1.14(m)
			WATER
☒	☐	☐	9. Solid waste is prevented from entering surface waters and/or groundwater. 360-1.14(b) (1)
☒	☐	☐	10. Leachate is minimized through drainage control or other means and is prevented from entering surface waters.360-1.14(b) (2); 360-2.17(q)
			ACCESS
☒	☐	☐	11. Access to the facility is strictly and continuously controlled by fencing, gates signs, natural barriers, or other suitable means.360-1.14(d)*
☒	☐	☐	12. On-site roads are passable 360-1.14(n); 360-2.17(s)
			WASTE HANDLING
☒	☐	☐	13. Solid Waste is spread in layers 2 feet or less in thickness, proper compaction is achieved with 3 passes of appropriately sized equipment and the working face area is the smallest practicable. 360-2.17(b) (1)
☒	☐	☐	14. Lift height does not exceed 10 feet, slope is at least 4 percent and no more than 33 percent, and wastes are placed and graded in accordance with fill progression plan 360-2.17(b) (2)
			15. Solid waste preparation measures and/or precautions are provided:
☒	☐	☐	a. Stabilized/dewatered sledges 360-2.17(n)
☒	☐	☐	b. Asbestos Waste 360-2.17 (p) (3)
☒	☐	☐	c. Tanks 360-2.17(r)
			COVER
☐	☒	☐	16. Daily cover material is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required to control vectors, fires, odors, blowing litter, and scavenging 360-2.17 (c)
☐	☒	☐	17. Intermediate cover is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required 360-2.17 (d)
☒	☐	☐	18. Final cover system material is suitable in quality, of proper compacted thickness. and is applied and maintained.360-2.17 (e)
			MONITORING
☒	☐	☐	19. Monitoring wells are intact. 360-2.17 (a); 360-2.11(a) (8) (v); (c) (1)
☒	☐	☐	20. Decomposition gasses are monitored and controlled 360-2.17(f); 360-8.3 (c)
			OTHER
			On Continuation Sheet identify any other violations

I Hereby Acknowledge receipt of the Facility Copy of this report

Please Print

Not Requested DK

Signature

47-15-1 (1/98)-q
(Automated 6/07)

NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

6 NYCRR Part 360

SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT

Continuation Sheet

FACILITY NAME:	LOCATION:	FACILITY ID#:	DATE:	TIME:
High Acres Landfill	Perinton(T), Monroe(C)	28 S 32	06/24/19	

INSPECTOR'S NAME:	CODE:	PERSONS INTERVIEWED
Dave Kay	M	see page one

REGION	WEATHER CONDITIONS:	DEC PERMIT NUMBER
8	see page one	8 - 9908 - 00162 / 00032

SHEET	CONTINUATION SHEET	PART(S) 360-
2 OF 2	☐ YES ☒ NO	Attached

Violations of Part 360 are Subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in ECL Article 71 and as Appropriate, the Clean Water and Air Acts. Additional Violations May be noted on Sheet one of this inspection report. Provide site sketches, clarification, supplemental information, locations of photographs or samples and/or locations of violations/uncorrected violations must be described in detail and located on a sketch.)

Item # 3a- Town brush/wood chip stockpile managed. Town leaves being managed to compost. Leaf/food waste compost continues to be managed. Construction: Zoladz working on mass excavation of cell 11Mid 2 hauling soil to Packard Farm and to cover in cell 12. Stockpile maintenance of import materials (drainage sand/gravel, clay, stone) continues.

5- Litter picking is an ongoing process. Need to pick ASR from the north perimeter road.

8- The odor neutralizers, along with gas collection and flaring are utilized for ongoing odor control mechanisms. The vapor units on the north fence were in use. The Odor Boss unit is setup on top of the north slope cell 12A. Eight stick sprayers were set-up along the top of the north slope of cell 12, they were put on-line late in the afternoon and working to get the settings correct. Onsite, there was variable, slight to moderate garbage odor on the perimeter road north-northwest and northwest of the active area.

12- Onsite roads were dry, dusty, and watered, all passable.

13- Today, there was one active face in the northeast area of section 2, of 12B, along the east berm.

16- The Enviro-cover system along with soil and bud materials are being used for daily cover.

17- CWC started placing topsoil on the upper section of the north slope of cell 12A. Grass has started to germinate on the enhanced cover on top of cells 9/10/11.

20- The utility flare, one main flare and GTE for gas collection/control. CEC was overdrilling the gas wells in the Old LF for the overlay construction. They were also working on installing laterals to the new vertical wells drilled in the WEX. CWC was working on backfilling the overdrills, in the Old LF, with stone and placing vertical perforated pipe to tie horizontals to.

I Hereby acknowledge receipt of the Facility Copy of this report

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Not Requested DK

Signature

47-15-1A (1/98)-q
(Automated 6/07)

NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

6 NYCRR Part 360-2

SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT

(For use at Mixed Solid Waste Landfills, Industrial /Commercial Waste Monofills, or Ash Residue Monofills)

FACILITY NAME:	LOCATION:	FACILITY ID#:	DATE:	TIME:
High Acres Landfill	Perinton(T), Monroe(C)	28 S 32	06/26/19	

INSPECTOR'S NAME:	CODE:	PERSONS INTERVIEWED
Dave Kay	M	Pat O'Dell

REGION	WEATHER CONDITIONS:	DEC PERMIT NUMBER
8	MCL-PCL; 60's-80's°F; W: 0-10+ SW,WSW	8 - 9908 - 00162 / 00032

SHEET	CONTINUATION SHEET	PART(S) 360-
1 OF 2	☒YES ☐NO	attached

Violations of Part 360 are Subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in ECL Article 71 and as Appropriate, the Clean Water and Air Acts. Additional and/or Multiple Violations May be Described on the Attached Continuation Sheet. This form is a record of conditions which are observed in the field at the time of inspection Items marked NI indicate No Inspection and do not mean no violation has occurred.

☒ PART 360 PERMIT ☐ ORDER ON CONSENT ☐ REGISTERED ☐ EXEMPT ☐ COMPLAINT ☐ CLOSED

C	NI	V	
			FACILITY MANAGEMENT
☒	☐	☐	1. Solid waste management facility is authorized and management occurs within approved area. 360-1.7(a) (1), (b); 360-1.8(h) (5)
			2. Incoming waste is monitored by a control program for unauthorized waste and solid waste material accepted are approved for management at the facility 360-1.14(e) (1)
☐	☒	☐	a. Hazardous/Low Level Radioactive Wastes 360-1.5(b), 360-2.17(m)
☒	☐	☐	b. Control Program. 360-1.14(e) (1)
☒	☐	☐	c. Department Approved Facility for Specific Wastes. 360-1.14(r)
☒	☐	☐	d. Bulk Liquids 360-2.17 (k)
☒	☐	☐	e. Whole Tires 360-2.17(v)
☒	☐	☐	f. Lead Acid Batteries 360-2.17 (w)
			3. Operator maintains and operates facility components and equipment in accordance with the permit and their intended use.
☒	☐	☐	a. Maintenance of Facility Components/Site Grading. 360-1.14(f) (1); 360-2.17 (h), (u)
☒	☐	☐	b. Adequate Equipment. 360-1.14(f) (2)
			4. Operational Records are available where required.
☐	☒	☐	a. Unauthorized Solid Waste Records. 360-1.14(i) (1)
☐	☒	☐	b. Self Inspection Records. 360-1.14(i) (2)
☐	☒	☐	c. Permit Application Records. 360-1.14(i) (3)
☐	☒	☐	d. Monitoring Records. 360-1.14(i) (4)
☐	☒	☐	e. Facility Operator Records. 360-1.14(u) (1)
☐	☒	☐	f. Fill Progression Records. 360-2.9 (a)
☐	☒	☐	g. Primary Leachate Collection and Removal System Logs 260-2.9(j) (3)
☐	☒	☐	h. Asbestos Waste Site Plan 360-2.17 (p) (2)
☐	☒	☐	i. Random waste collection vehicle inspection records 260-2.17(q)
			OPERATION CONTROL
☒	☐	☐	5. Solid waste, including blowing litter, is sufficiently confined and controlled. 360-1.14(j)
☒	☐	☐	6. Dust is effectively controlled and does not constitute an offsite nuisance. 360-1.14(k)
☒	☐	☐	7. On-Site vector populations are prevented or controlled, and vector breeding areas are prevented 360-1.14(l)
☐	☒	☐	8. Odors are effectively controlled so that they do not constitute a nuisance. 360-1.14(m)
			WATER
☒	☐	☐	9. Solid waste is prevented from entering surface waters and/or groundwater. 360-1.14(b) (1)
☒	☐	☐	10. Leachate is minimized through drainage control or other means and is prevented from entering surface waters 360-1.14(b) (2); 360-2.17(q)
			ACCESS
☒	☐	☐	11. Access to the facility is strictly and continuously controlled by fencing, gates signs, natural barriers, or other suitable means.360-1.14(d)*
☒	☐	☐	12. On-site roads are passable. 360-1.14(n); 360-2.17(s)
			WASTE HANDLING
☒	☐	☐	13. Solid Waste is spread in layers 2 feet or less in thickness, proper compaction is achieved with 3 passes of appropriately sized equipment and the working face area is the smallest practicable. 360-2.17(b) (1)
☒	☐	☐	14. Lift height does not exceed 10 feet, slope is at least 4 percent and no more than 33 percent, and wastes are placed and graded in accordance with fill progression plan 360-2.17(b) (2)
			15. Solid waste preparation measures and/or precautions are provided:
☒	☐	☐	a. Stabilized/dewatered sledges 360-2.17(n)
☒	☐	☐	b. Asbestos Waste 360-2.17 (p) (3)
☒	☐	☐	c. Tanks 360-2.17(r)
			COVER
☐	☒	☐	16 Daily cover material is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required to control vectors, fires, odors, blowing litter, and scavenging 360-2.17 (c)
☐	☒	☐	17. Intermediate cover is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required 360-2.17 (d)
☒	☐	☐	18. Final cover system material is suitable in quality, of proper compacted thickness, and is applied and maintained.360-2.17 (e)
			MONITORING
☒	☐	☐	19. Monitoring wells are intact. 360-2.17 (e); 360-2.11(a) (8) (v); (c) (1)
☒	☐	☐	20. Decomposition gasses are monitored and controlled 360-2.17(f); 360-8.3 (c)
			OTHER
			On Continuation Sheet Identify any other violations

I Hereby Acknowledge receipt of the Facility Copy of this report

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Not Requested DK

Signature

47-15-1 (1/98)-q
(Automated 6/07)

NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

6 NYCRR Part 360

SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT

Continuation Sheet

FACILITY NAME:	LOCATION:	FACILITY ID#:	DATE:	TIME:
High Acres Landfill	Perinton(T), Monroe(C)	28 S 32	06/26/19	

INSPECTOR'S NAME:	CODE:	PERSONS INTERVIEWED
Dave Kay	M	see page one

REGION	WEATHER CONDITIONS:	DEC PERMIT NUMBER
8	see page one	8 - 9908 - 00162 / 00032

SHEET	CONTINUATION SHEET	PART(S) 360-
2 OF 2	☐ YES ☒ NO	Attached

Violations of Part 360 are Subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in ECL Article 71 and as Appropriate, the Clean Water and Air Acts. Additional Violations May be noted on Sheet one of this inspection report. Provide site sketches, clarification, supplemental information, locations of photographs or samples and/or locations of violations(uncorrected violations must be described in detail and located on a sketch.)

Item # 3a- Town brush/wood chip stockpile managed. Town leaves being managed to compost. Monroe County was onsite turning the leaf compost with their wind row turner. The leaf/food waste compost continues to be managed. Construction: Zoladz working on mass excavation of cell 11Mid 2 hauling soil to Packard Farm and to cover in cell 12. They have exposed the tie-in to the southeast area of cell 12 and the tie-in at the east end of cell 11. Stockpile maintenance of import materials (drainage sand/gravel, clay, stone) continues.

5- Litter picking is an ongoing process. Need to pick ASR from the cell 11 haul road and the north perimeter road. The north and east slopes of cell 12 have been picked. The north ditch has been picked, some smaller litter remains that will need to get picked.

8- The odor neutralizers, along with gas collection and flaring are utilized for ongoing odor control mechanisms. The vapor units on the north fence were in use. The Odor Boss unit is setup on top of the north slope cell 12A. The stick sprayers along the top of the north slope of cell 12 were also in use. Onsite, there was variable, slight to moderate garbage odor on the perimeter road northeast and east-northeast of the active area.

12- Onsite roads were dry, dusty, and watered, all passable.

13- Today, there was one active face in the northeast area of section 2, of 12B, along the east berm.

16- The Enviro-cover system along with soil and bud materials are being used for daily cover.

17- CWC was not working on the upper section of the north slope of cell 12A today. There are a few areas on the south slope, east side, of section one that have bulky items at the surface. These items need to be pulled and the surface dressed up.

20- The utility flare, one main flare and GTE for gas collection/control. CEC was drilling a new vertical well and working on installing laterals. CWC was working on the horizontal installations in the Old LF. A header line was hit today affecting some collection points temporarily.

I Hereby acknowledge receipt of the Facility Copy of this report

Please Print

Not Requested DK

Signature

47-15-1A (1/96)-q
(Automated 6/07)

NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT
6 NYCRR Part 360-2
SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT

(For use at Mixed Solid Waste Landfills, Industrial /Commercial Waste Monofills, or Ash Residue Monofills)

FACILITY NAME:	LOCATION: Perinton Parkway	FACILITY ID#:	DATE:	TIME:
High Acres Landfill	Perinton (T), Monroe (C)	28S32	6-27-19	11:30

INSPECTOR'S NAME:	CODE:	PERSONS INTERVIEWED & TITLES
Mark Amann	S	Pat O'Dell, Dave Cross – WM; Mike Bracci – Golder

REGION	WEATHER CONDITIONS:	DEC PERMIT NUMBER
8	N/NW/W winds 4 mph, 70's-80's °F	8-9908-00162/00032

SHEET	CONTINUATION SHEET	PART(S) 360-
1 OF 2	☒ YES ☐ NO	- Attached

Violations of Part 360 are Subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in ECL Article 71 and as Appropriate, the Clean Water and Air Acts. Additional and/or Multiple Violations May be Described on the Attached Continuation Sheet.
This form is a record of conditions which are observed in the field at the time of inspection
Items marked NI indicate No Inspection and do not mean no violation has occurred

☒ PART 360 PERMIT ☐ ORDER ON CONSENT ☐ REGISTERED ☐ EXEMPT ☐ COMPLAINT ☐ CLOSED

C	NI	V	
			FACILITY MANAGEMENT
☒	☐	☐	1. Solid waste management facility is authorized and management occurs within approved area. 360-1.7(a) (1), (b); 360-1.8(h) (5)
			2. Incoming waste is monitored by a control program for unauthorized waste and solid waste material accepted are approved for management at the facility 360-1.14(e) (1)
☐	☒	☐	a. Hazardous/Low Level Radioactive Wastes 360-1.5(b), 360-2.17(m)
☐	☒	☐	b. Control Program, 360-1.14(e) (1)
☐	☒	☐	c. Department Approved Facility for Specific Wastes. 360-1.14(r)
☒	☐	☐	d Bulk Liquids 360-2.17 (k)
☒	☐	☐	e. Whole Tires 360-2.17(v)
☐	☒	☐	f. Lead Acid Batteries 360-2.17 (w)
			3. Operator maintains and operates facility components and equipment in accordance with the permit and their intended use.
☒	☐	☐	a. Maintenance of Facility Components/Site Grading. 360-1.14(f) (1); 360-2.17 (h), (u)
☒	☐	☐	b. Adequate Equipment. 360-1.14(f) (2)
			4. Operational Records are available where required:
☐	☒	☐	a. Unauthorized Solid Waste Records. 360-1 14(l) (1)
☐	☒	☐	b. Self Inspection Records. 360-1.14(l) (2)
☐	☒	☐	c. Permit Application Records. 360-1.14(l) (3)
☐	☒	☐	d. Monitoring Records 360-1.14(l) (4)
☐	☒	☐	e. Facility Operator Records. 360-1.14(u) (1)
☐	☒	☐	f. Fill Progression Records. 360-2.9 (e)
☐	☒	☐	g. Primary Leachate Collection and Removal System Logs 260-2.9(j) (3)
☐	☒	☐	h. Asbestos Waste Site Plan 360-2 17 (p) (2)
☐	☒	☐	i Random waste collection vehicle inspection records 260-2.17(q)
			OPERATION CONTROL
☒	☐	☐	5. Solid waste, including blowing litter, is sufficiently confined and controlled 360-1 14(j)
☐	☒	☐	6. Dust is effectively controlled and does not constitute an offsite nuisance. 360-1.14(k)
☒	☐	☐	7. On-Site vector populations are prevented or controlled, and vector breeding areas are prevented 360-1.14(l)
☐	☒	☐	8. Odors are effectively controlled so that they do not constitute a nuisance. 360-1.14(m)
			WATER
☒	☐	☐	9. Solid waste is prevented from entering surface waters and/or groundwater. 360-1.14(b) (1)
☒	☐	☐	10. Leachate is minimized through drainage control or other means and is prevented from entering surface waters 360-1.14(b) (2); 360-2 17(q)
			ACCESS
☒	☐	☐	11. Access to the facility is strictly and continuously controlled by fencing, gates signs, natural barriers, or other suitable means 360-1.14(d)*
☒	☐	☐	12. On-site roads are passable. 360-1.14(n); 360-2.17(s)
			WASTE HANDLING
☒	☐	☐	13. Solid Waste is spread in layers 2 feet or less in thickness, proper compaction is achieved with 3 passes of appropriately sized equipment and the working face area is the smallest practicable. 360-2.17(b) (1)
☒	☐	☐	14. Lift height does not exceed 10 feet, slope is at least 4 percent and no more than 33 percent, and wastes are placed and graded in accordance with fill progression plan 360-2.17(b) (2)
			15. Solid waste preparation measures and/or precautions are provided:
☒	☐	☐	a Stabilized/dewatered sludges 360-2.17(n)
☒	☐	☐	b. Asbestos Waste 360-2.17 (p) (3)
☒	☐	☐	c. Tanks 360-2.17(r)
			COVER
☐	☒	☐	16. Daily cover material is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required to control vectors, fires odors, blowing litter, and scavenging 360-2.17 (c)
☐	☒	☐	17. Intermediate cover is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required 360-2.17 (d)
☒	☐	☐	18. Final cover system material is suitable in quality, of proper compacted thickness, and is applied and maintained 360-2 17 (e)
			MONITORING
☐	☒	☐	19. Monitoring wells are intact. 360-2.17 (a); 360-2.11(a) (8) (v); (c) (1)
☒	☐	☐	20. Decomposition gasses are monitored and controlled 360-2.17(f); 360-8.3(c)
			OTHER
			On Continuation Sheet Identify any other violations

I Hereby acknowledge receipt of the Facility Copy of this report

Mark Amann
Inspector's Signature

Individual in responsible charge

Signature not requested MA
Signature/Date

47-15-1 (1/98)-q
(Automated 6/07)

NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

6 NYCRR Part 360
SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT
Continuation Sheet

FACILITY NAME: High Acres Landfill	LOCATION: Perinton Parkway Perinton (T), Monroe (C)	FACILITY ID#: 28S32	DATE: 6-27-19	TIME: 11:30
INSPECTOR'S NAME: Mark Amann	CODE: S	PERSONS INTERVIEWED & TITLES See page 1		
REGION 8	WEATHER CONDITIONS: See page 1	DEC PERMIT NUMBER 8-9908-00162/00032		
SHEET 2 OF 2	CONTINUATION SHEET ☐ YES ☒ NO	PART(S) 360- - Attached		

Violations of Part 360 are Subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in ECL Article 71 and as Appropriate, the Clean Water and Air Acts.
Additional Violations May be noted on Sheet one of this inspection report.
Provide site sketches, clarification, supplemental information, locations of photographs or samples and/or locations of violations (uncorrected violations must be described in detail and located on a sketch.)

Item #1: I attended a construction progress meeting with representatives from WM, Golder, Zoladz, et al. and then proceeded to inspect the site. Zoladz continued mass excavation work in the cell 11MID2 floor area. CWC continued installing gas collection piping on the side slope of cell 11MID2. Golder oversaw the backfilling of the trenches with compacted clay liner material and performed tests with a nuclear density gauge; readings were within the acceptable window. CEC continued installing gas conveyance piping on the north side slope of cell 7 and a vertical gas well in cells 8/9 just outside the northwest corner of the enhanced soil cap. CEC utilized a vacuum box over the bore hole and spread odor neutralizing granules to reduce odor. Waste from the bore hole was trucked to the active face. Construction of the enhanced soil cap was complete and vegetation was starting to grow. Zoladz fine-graded the intermediate cover south of the enhanced soil cap; said area will receive topsoil and be seeded. GHD collected air samples from incoming garbage as part of the waste characterization study. CEC repaired the damaged 24-inch gas header yesterday.

Item #6: On-site roads were watered. Minor dust was present on Perinton Parkway north of cell 12. The north perimeter road must be watered regularly and frequently to ensure dust is minimized.

Item #8: Odor control measures such as gas collection and odor neutralizer were in use. Flares and power plants were operational.

Item #16: The EnviroCover system, soil, and BUDS were used as daily cover.

Item #17: Certain areas on the side slopes of the WEX and on the south slope of the old High Acres landfill were not adequately vegetated or had no vegetation. Please ensure that vegetation is established.

Mark Amann
Inspector's Signature

I Hereby acknowledge receipt of the Facility Copy of this report
Individual in responsible charge

Signature not requested MA
Signature/Date

47-15-1A (1/98)-q
(Automated 6/07)

NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS
6 NYCRR Part 360-2
SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT

(For use at Mixed Solid Waste Landfills, Industrial /Commercial Waste Monofills, or Ash Residue Monofills)

FACILITY NAME:	LOCATION:	FACILITY ID#:	DATE:	TIME:
High Acres Landfill	Perinton(T), Monroe(C)	28 S 32	07/01/19	

INSPECTOR'S NAME:	CODE:	PERSONS INTERVIEWED
Dave Kay	M	Pat O'Dell

REGION	WEATHER CONDITIONS:	DEC PERMIT NUMBER
8	MS-PCL; 60's-80's°F; W: 0-5+ NNW,WNW,N,SW,NW	8 - 9908 - 00162 / 00032

SHEET	CONTINUATION SHEET	PART(S) 360-
1 OF 2	☒YES ☐NO	attached

Violations of Part 360 are Subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in ECL Article 71 and as Appropriate, the Clean Water and Air Acts. Additional and/or Multiple Violations May be Described on the Attached Continuation Sheet. This form is a record of conditions which are observed in the field at the time of inspection. Items marked NI indicate No Inspection and do not mean no violation has occurred.

☒ PART 360 PERMIT ☐ ORDER ON CONSENT ☐ REGISTERED ☐ EXEMPT ☐ COMPLAINT ☐ CLOSED

C	NI	V	
			FACILITY MANAGEMENT
X			1. Solid waste management facility is authorized and management occurs within approved area. 360-1.7(a) (1), (b); 360-1.8(h) (5)
			2. Incoming waste is monitored by a control program for unauthorized waste and solid waste material accepted are approved for management at the facility 360-1.14(e) (1)
	X		a. Hazardous/Low Level Radioactive Wastes 360-1.5(b), 360-2.17(m)
X			b. Control Program, 360-1.14(e) (1)
X			c. Department Approved Facility for Specific Wastes. 360-1.14(r)
X			d. Bulk Liquids 360-2.17 (k)
X			e. Whole Tires 360-2.17(v)
X			f. Lead Acid Batteries 360-2.17 (w)
			3. Operator maintains and operates facility components and equipment in accordance with the permit and their intended use.
X			a. Maintenance of Facility Components/Site Grading. 360-1.14(f) (1); 360-2 17 (h), (u)
X			b. Adequate Equipment. 360-1.14(f) (2)
			4. Operational Records are available where required:
	X		a. Unauthorized Solid Waste Records. 360-1.14(i) (1)
	X		b. Self Inspection Records. 360-1.14(i) (2)
	X		c. Permit Application Records. 360-1.14(i) (3)
	X		d. Monitoring Records. 360-1.14(i) (4)
	X		e. Facility Operator Records. 360-1.14(u) (1)
	X		f. Fill Progression Records. 360-2.9 (e)
	X		g. Primary Leachate Collection and Removal System Logs 260-2.9(j) (3)
	X		h. Asbestos Waste Site Plan 360-2.17 (p) (2)
	X		i. Random waste collection vehicle inspection records 260-2.17(q)
			OPERATION CONTROL
X			5. Solid waste, including blowing litter, is sufficiently confined and controlled. 360-1.14(j)
X			6. Dust is effectively controlled and does not constitute an offsite nuisance. 360-1.14(k)
X			7. On-Site vector populations are prevented or controlled, and vector breeding areas are prevented 360-1.14(l)
	X		8. Odors are effectively controlled so that they do not constitute a nuisance. 360-1.14(m)
			WATER
X			9. Solid waste is prevented from entering surface waters and/or groundwater. 360-1.14(b) (1)
X			10. Leachate is minimized through drainage control or other means and is prevented from entering surface waters.360-1.14(b) (2); 360-2 17(q)
			ACCESS
X			11. Access to the facility is strictly and continuously controlled by fencing, gates signs, natural barriers, or other suitable means.360-1.14(d)*
X			12. On-site roads are passable. 360-1.14(n); 360-2.17(s)
			WASTE HANDLING
X			13. Solid Waste is spread in layers 2 feet or less in thickness, proper compaction is achieved with 3 passes of appropriately sized equipment and the working face area is the smallest practicable. 360-2.17(b) (1)
X			14. Lift height does not exceed 10 feet, slope is at least 4 percent and no more than 33 percent, and wastes are placed and graded in accordance with fill progression plan 360-2.17(b) (2)
			15. Solid waste preparation measures and/or precautions are provided:
X			a. Stabilized/dewatered sledges 360-2.17(n)
X			b. Asbestos Waste 360-2.17 (p) (3)
X			c. Tanks 360-2.17(r)
			COVER
	X		16 Daily cover material is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required to control vectors, fires, odors, blowing litter, and scavenging 360-2.17 (c)
	X		17. Intermediate cover is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required 360-2.17 (d)
X			18. Final cover system material is suitable in quality, of proper compacted thickness, and is applied and maintained.360-2.17 (e)
			MONITORING
X			19. Monitoring wells are intact. 360-2.17 (a); 360-2.11(a) (8) (v); (c) (1)
X			20. Decomposition gasses are monitored and controlled 360-2.17(f); 360-8.3 (c)
			OTHER
			On Continuation Sheet identify any other violations

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47-15-1 (1/98)-q
(Automated 6/07)

NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

6 NYCRR Part 360
SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT
Continuation Sheet

FACILITY NAME:	LOCATION:	FACILITY ID#:	DATE:	TIME:
High Acres Landfill	Perinton(T), Monroe(C)	28 S 32	07/01/19	

INSPECTOR'S NAME:	CODE:	PERSONS INTERVIEWED
Dave Kay	M	see page one

REGION	WEATHER CONDITIONS:	DEC PERMIT NUMBER
8	see page one	8 - 9908 - 00162 / 00032

SHEET	CONTINUATION SHEET	PART(S) 360-
2 OF 2	☐ YES ☒ NO	Attached

Violations of Part 360 are Subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in ECL Article 71 and as Appropriate, the Clean Water and Air Acts. Additional Violations May be noted on Sheet one of this Inspection report. Provide site sketches, clarification, supplemental information, locations of photographs or samples and/or locations of violations(uncorrected violations must be described in detail and located on a sketch.)

Item # 3a- Town brush/wood chip stockpile managed. Town leaves being managed to compost. The leaf/food waste compost continues to be managed. Construction: Zoladz working on mass excavation of cell 11Mid 2 hauling soil to Packard Farm and to cover in cell 12. They continue to excavate and expose the south tie-in of cell 11 and were building the bench in cell 11 Mid 2. Stockpile maintenance of import materials (drainage sand/gravel, clay, stone) continues. Some geosynthetics were delivered today.

5- Litter picking is an ongoing process. Need to pick ASR from the cell 11 haul road and the north perimeter road. The north ditch has been picked, some smaller litter remains that will need to get picked. The cell 12 runout area has been picked. The bags of picked litter in the runout area need to be collected.

8- The odor neutralizers, along with gas collection and flaring are utilized for ongoing odor control mechanisms. The vapor units on the north fence were in use. The Odor Boss unit is setup on top of the north slope cell 12A. The stick sprayers along the top of the north slope of cell 12 were also in use. Onsite, there was variable, slight to moderate garbage odor on the perimeter road, with wind shifts, northeast, east and southeast of the active area.

12- Onsite roads were dry, dusty, and watered, all passable. Need to water more frequently, road surfaces were drying out quickly.

13- Today, there was one active face in the northeast area of section 2, of 12B, along the east berm.

16- The Enviro-cover system along with soil and bud materials are being used for daily cover.

17- The cover on the west side of section 1 in cell 12B needs to get dressed up and some bulky items picked.

20- The utility flare, one main flare and GTE for gas collection/control. CEC has completed drilling the new vertical wells and the overdrills in the Old LF. CEC was working on the new sub-header/lateral installation on the north slope of cell 8/9. CWC was working on the horizontal installations in the Old LF.

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Signature

47-15-1A (1/98)-q
(Automated 6/07)

NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS
6 NYCRR Part 360-2
SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT

(For use at Mixed Solid Waste Landfills, Industrial /Commercial Waste Monofills, or Ash Residue Monofills)

FACILITY NAME:	LOCATION:	FACILITY ID#:	DATE:	TIME:
High Acres Landfill	Perinton(T), Monroe(C)	28 S 32	07/02/19	

INSPECTOR'S NAME:	CODE:	PERSONS INTERVIEWED
Dave Kay	M	Pat O'Dell

REGION	WEATHER CONDITIONS:	DEC PERMIT NUMBER
8	CL, lt. rain; 60's-80's°F; W: 5-10+ NW	8 - 9908 - 00162 / 00032

SHEET	CONTINUATION SHEET	PART(S) 360-
1 OF 2	☒YES ☐NO	attached

Violations of Part 360 are Subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in ECL Article 71 and as Appropriate, the Clean Water and Air Acts. Additional and/or Multiple Violations May be Described on the Attached Continuation Sheet. This form is a record of conditions which are observed in the field at the time of inspection. Items marked NI indicate No Inspection and do not mean no violation has occurred.

☒ PART 360 PERMIT ☐ ORDER ON CONSENT ☐ REGISTERED ☐ EXEMPT ☐ COMPLAINT ☐ CLOSED

C	NI	V	
			FACILITY MANAGEMENT
☒	☐	☐	1. Solid waste management facility is authorized and management occurs within approved area. 360-1.7(a) (1), (b); 360-1.8(h) (5)
			2. Incoming waste is monitored by a control program for unauthorized waste and solid waste material accepted are approved for management at the facility 360-1.14(e) (1)
☐	☒	☐	a. Hazardous/Low Level Radioactive Wastes 360-1.5(b), 360-2.17(m)
☒	☐	☐	b. Control Program. 360-1.14(e) (1)
☒	☐	☐	c. Department Approved Facility for Specific Wastes. 360-1.14(r)
☒	☐	☐	d. Bulk Liquids 360-2.17 (k)
☒	☐	☐	e. Whole Tires 360-2.17(v)
☒	☐	☐	f. Lead Acid Batteries 360-2.17 (w)
			3. Operator maintains and operates facility components and equipment in accordance with the permit and their intended use.
☒	☐	☐	a. Maintenance of Facility Components/Site Grading. 360-1.14(f) (1); 360-2.17 (h), (u)
☒	☐	☐	b. Adequate Equipment. 360-1.14(f) (2)
			4. Operational Records are available where required.
☐	☒	☐	a. Unauthorized Solid Waste Records. 360-1.14(i) (1)
☐	☒	☐	b. Self Inspection Records. 360-1.14(i) (2)
☐	☒	☐	c. Permit Application Records. 360-1.14(i) (3)
☐	☒	☐	d. Monitoring Records. 360-1.14(i) (4)
☐	☒	☐	e. Facility Operator Records. 360-1.14(u) (1)
☐	☒	☐	f. Fill Progression Records. 360-2.9 (e)
☐	☒	☐	g. Primary Leachate Collection and Removal System Logs 360-2.9(j) (3)
☐	☒	☐	h. Asbestos Waste Site Plan 360-2.17 (p) (2)
☐	☒	☐	i. Random waste collection vehicle inspection records 360-2.17(q)
			OPERATION CONTROL
☒	☐	☐	5. Solid waste, including blowing litter, is sufficiently confined and controlled. 360-1.14(j)
☒	☐	☐	6. Dust is effectively controlled and does not constitute an offsite nuisance. 360-1.14(k)
☒	☐	☐	7. On-Site vector populations are prevented or controlled, and vector breeding areas are prevented 360-1.14(l)
☐	☒	☐	8. Odors are effectively controlled so that they do not constitute a nuisance. 360-1.14(m)
			WATER
☒	☐	☐	9. Solid waste is prevented from entering surface waters and/or groundwater. 360-1.14(b) (1)
☒	☐	☐	10. Leachate is minimized through drainage control or other means and is prevented from entering surface waters.360-1.14(b) (2); 360-2.17(q)
			ACCESS
☒	☐	☐	11. Access to the facility is strictly and continuously controlled by fencing, gates signs, natural barriers, or other suitable means 360-1.14(d)*
☒	☐	☐	12. On-site roads are passable. 360-1.14(n); 360-2.17(s)
			WASTE HANDLING
☒	☐	☐	13. Solid Waste is spread in layers 2 feet or less in thickness, proper compaction is achieved with 3 passes of appropriately sized equipment and the working face area is the smallest practicable. 360-2.17(b) (1)
☒	☐	☐	14. Lift height does not exceed 10 feet, slope is at least 4 percent and no more than 33 percent, and wastes are placed and graded in accordance with fill progression plan 360-2.17(b) (2)
			15. Solid waste preparation measures and/or precautions are provided:
☒	☐	☐	a. Stabilized/dewatered sludges 360-2.17(n)
☒	☐	☐	b. Asbestos Waste 360-2.17 (p) (3)
☒	☐	☐	c. Tanks 360-2.17(r)
			COVER
☐	☒	☐	16. Daily cover material is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required to control vectors, fires, odors, blowing litter, and scavenging 360-2.17 (c)
☐	☒	☐	17. Intermediate cover is suitable in quality, of proper compacted thickness, and is applied and maintained where and when required 360-2.17 (d)
☒	☐	☐	18. Final cover system material is suitable in quality, of proper compacted thickness, and is applied and maintained.360-2.17 (e)
			MONITORING
☒	☐	☐	19. Monitoring wells are intact. 360-2.17 (a); 360-2.11(a) (8) (v); (c) (1)
☒	☐	☐	20. Decomposition gasses are monitored and controlled 360-2.17(f); 360-8.3 (c)
			OTHER
			On Continuation Sheet Identify any other violations

[signature]

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47-15-1 (1/98)-q
(Automated 6/07)

NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

6 NYCRR Part 360
SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT
Continuation Sheet

FACILITY NAME:	LOCATION:	FACILITY ID#:	DATE:	TIME:
High Acres Landfill	Perinton(T), Monroe(C)	28 S 32	07/02/19	

INSPECTOR'S NAME:	CODE:	PERSONS INTERVIEWED
Dave Kay	M	see page one

REGION	WEATHER CONDITIONS:	DEC PERMIT NUMBER
8	see page one	8 - 9908 - 00162 / 00032

SHEET	CONTINUATION SHEET	PART(S) 360-
2 OF 2	☐ YES ☒ NO	Attached

Violations of Part 360 are Subject to Applicable Civil, Administrative, and Criminal Sanctions Set Forth in ECL Article 71 and as Appropriate, the Clean Water and Air Acts. Additional Violations May be noted on Sheet one of this inspection report. Provide site sketches, clarification, supplemental information, locations of photographs or samples and/or locations of violations(uncorrected violations must be described in detail and located on a sketch.)

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5- Litter picking is an ongoing process. Need to pick ASR from the cell 11 haul road and the north perimeter road. The north ditch has been picked, some smaller litter remains that will need to get picked. The bags of picked litter in the runout area need to be collected.

8- The odor neutralizers, along with gas collection and flaring are utilized for ongoing odor control mechanisms. The vapor units on the north fence were in use. The Odor Boss unit is setup on top of the north slope cell 12A. The stick sprayers along the top of the north slope of cell 12 were also in use. Onsite, there was variable, slight to moderate garbage odor on the perimeter road southeast of the active area. The waste characterization/odor study continues.

12- Onsite roads were wet and muddy to start, drying out some in areas, all passable.

13- Today, there was one active face in the northeast area of section 2, of 12B, along the east berm.

16- The Enviro-cover system along with soil and bud materials are being used for daily cover.

17- Some areas on the south slope of the Old LF have been topsoiled to seed.

20- The utility flare, one main flare and GTE for gas collection/control. CEC was working on the new sub-header/lateral installation on the north slope of cell 8/9. CWC was working on the horizontal installations in the Old LF.

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Date	Time	Serial Number	Name	Phone Number	Address	Description of Odor	Investigated By	Wind Direction	Time of Investigation	Investigation Summary
6/24/2019	8:21 AM	1	Debra Bradstreet	585-425-2269	17 Winchester	Garbage	Colella	3 S	8:38 AM	0.5, Infrequent puffs every 30 seconds
6/24/2019	8:52 AM	2	Bethany Marcaitis	585-421-0194	78 Winchester Dr	Garbage	Colella	3 S	8:46 AM	0.5, Infrequent puffs every 30 seconds
6/24/2019	8:50 AM	3	Joe Dinolfo	585-305-4734	22 Copper Beach Run	Garbage	Colella	3 S	8:55 AM	0.5, Infrequent puffs every 30 seconds
6/24/2019	1:27 PM	4	Samantha Anderson	585-298-1046	8 Schoolmaster Circle	Garbage	Colella	6 SSE	1:50 PM	0.5, Steady odor of garbage
6/24/2019	2:02 PM	5	Virgil Brinco	585-789-7577	19 Tea Olive Lane	Garbage				
6/26/2019	11:46 AM	1	Daniel Nilsen	585-259-8325	2423 Cornwall Dr	Garbage	Colella	8 SW	12:18 PM	0.5, Infrequent gusts
6/26/2019	11:58 AM	2	Roberta Mace	585-737-1139	2417 Cornwall	Garbage	Colella	8 SW	12:27 PM	0.5, Infrequent gusts
6/28/2019	8:14 AM	1	Joe Dinolfo	585-305-4734	29 Copper Beach	Garbage	Colella	3 SW	8:31 AM	0.5, Steady gusts
6/30/2019	3:32 PM	1	Kathryn Agnew Relyea	585-329-7912	115 Hulburt Rd, Fairport	Garbage	Colella	10 NNW	4:04 PM	no odor detected

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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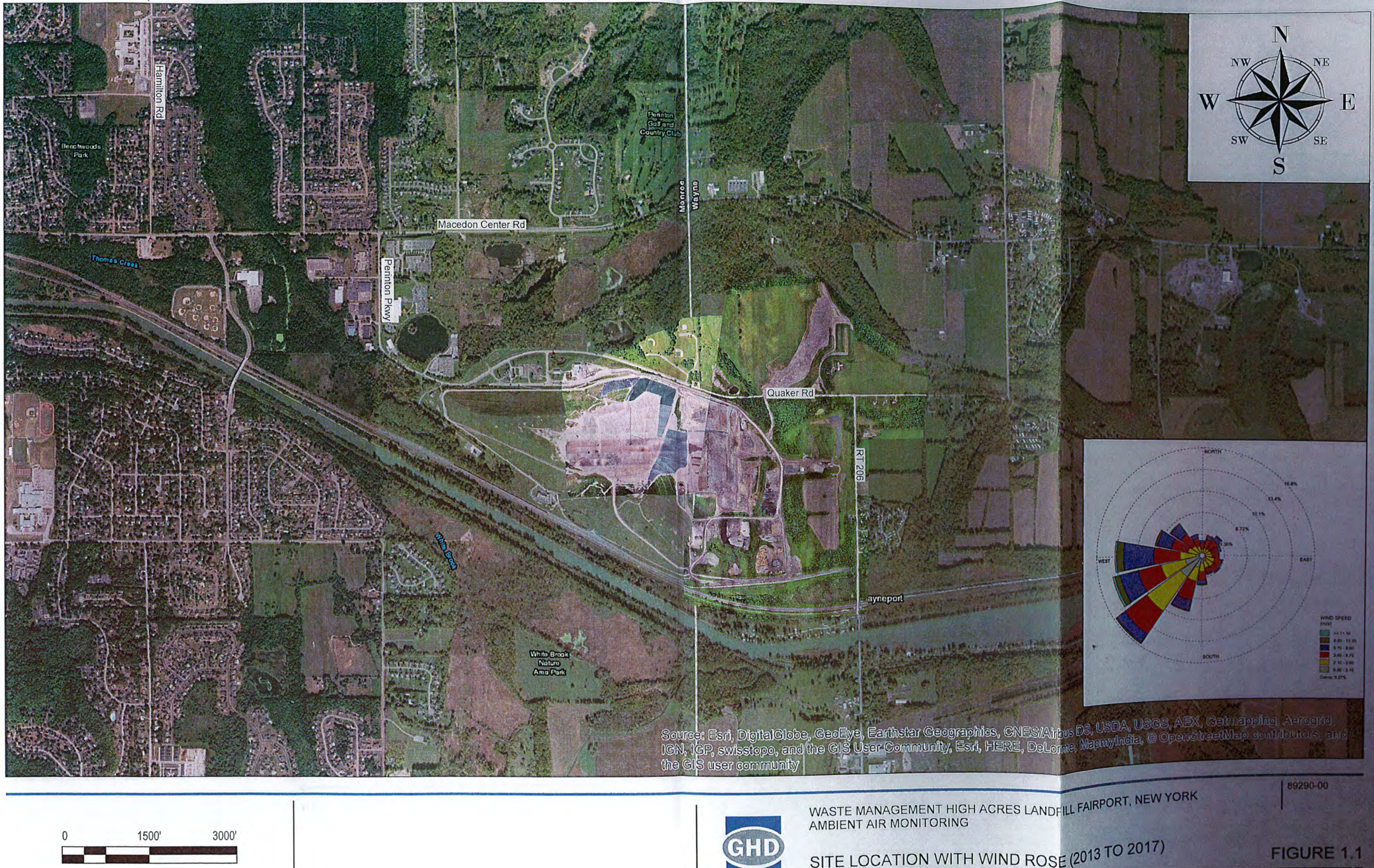

89290-00

WASTE MANAGEMENT HIGH ACRES LANDFILL FAIRPORT, NEW YORK
AMBIENT AIR MONITORING

GHD

SITE LOCATION WITH WIND ROSE (2013 TO 2017)

FIGURE 1.1

CAD File: P:\Drawings\89000s\89290-WM HIGH ACRES\ODOR EVAL WORK PLAN\CADD\Drawings\FIGURES\89290-FIG001.dwg

N

0 1500' 3000'

LEGEND

AMBIENT AIR MONITORING LOCATION

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WASTE MANAGEMENT HIGH ACRES LANDFILL
FAIRPORT, NEW YORK
AMBIENT AIR MONITORING

89290-00

AMBIENT AIR MONITORING LOCATIONS

FIGURE 3.1

CAD File: P:\Drawings\89000s\89290-WM HIGH ACRES\AMBIENT AIR MONITORING\CADD\Drawings\Civil\FIGURES\89290-FIGURE 1.dwg