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Attn: Title V Reports

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Subject: Combined 8-34 Semi-Annual Report, 40 CFR Subpart AAA Semi-Annual Report, Title V Semi-Annual Monitoring Report, and Title V Annual Compliance Certification Report  
Vasco Road Landfill, Livermore, California (Title V Facility No. A5095)

Dear Sir or Madam:

Vasco Road, LLC is pleased to submit the enclosed combined Bay Area Air Quality Management District (BAAQMD), Regulation 8, Rule 34 Semi-Annual Report; Semi-Annual Startup, Shutdown and Malfunction (SSM) Plan Report, Title V Semi-Annual Monitoring Report, and the Title V Annual Compliance Certification (ACC) Report to the BAAQMD and the U.S. Environmental Protection Agency (EPA) Region IX for the Vasco Road Landfill (Vasco).

The Title V ACC Report covers the period from February 1, 2020 through January 31, 2021. The Title V Semi-Annual Monitoring Report, the BAAQMD Rule 8-34 Semi-Annual Report and the SSM Plan Report cover the period from August 1, 2020 through January 31, 2021.

The Title V reports meet the requirements specified in the Title V permit, BAAQMD guidance on Title V report submittals, and Regulation 2, Rule 6. The Rule 8-34 report includes the information required by BAAQMD Rule 8-34-411 and also satisfies the requirements under the New Source Performance Standards (NSPS) for municipal solid waste landfills (40 California Code of Regulation [CFR] Part 60, Subpart WWW), including 40 CFR 60.757(f). The Semi-Annual SSM Plan Report satisfies the requirements under the Maximum Achievable Control Technology (MACT) rule for semi-annual reporting of SSM Plan implementation including 40 CFR 63.10(d)(S). The Title V reports and the SSM Plan report each includes a certification by the responsible official for Vasco.

If you have any questions regarding this submittal, please do not hesitate to reach me at (619) 201-3764 or [agunner@republicservices.com](mailto:agunner@republicservices.com) or Michael O'Connor at (707) 236-3791 or [moconnor@scsengineers.com](mailto:moconnor@scsengineers.com).

Sincerely,

Antonia Gunner  
Environmental Manager  
Vasco Road Landfill

cc: Matt Ketchem, Vasco  
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NSPS/BAAQMD Rule 8-34 Semi-Annual Report,  
SSM Plan Semi-Annual Report, Title V Semi-  
Annual Report, and Title V Annual Certification  
Vasco Road Landfill  
Livermore, California (Title V Facility No. 5095)

Prepared for:



**REPUBLIC**  
SERVICES

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For Submittal to:

Bay Area Air Quality Management District  
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**SCS ENGINEERS**

01204082.06 Task 1 | February 2021

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This submittal consisting of the New Source Performance Standards (NSPS)/Bay Area Air Quality Management District (BAAQMD) Rule 8-34 Semi-Annual Report, the Semi-Annual Startup, Shutdown, and Malfunction Plan Report, the Title V Semi-Annual Monitoring Report, and the Title V Annual Compliance Certification for the Vasco Road Landfill in Livermore, California, dated February 2021, was prepared and reviewed by the following:



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# SECTION I. NSPS/BAAQMD RULE 8-34 SEMI-ANNUAL REPORT

## 1.0 INTRODUCTION

On behalf of Vasco Road, LLC, SCS Engineers (SCS) hereby submits this New Source Performance Standard (NSPS), 40 Code of Federal Regulations (CFR) Part 60, Subpart WWW, and Bay Area Air Quality Management District (BAAQMD or District) Rule 8-34 Semi-Annual Report and Semi-Annual Start-up, Shutdown, and Malfunction (SSM) Plan Report for the period of August 1, 2020 through January 31, 2021 to the BAAQMD.

This Semi-Annual report also meets the requirements of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for MSW landfills, 40 CFR 63, Subpart AAAAA, and complies with the requirements specified in Vasco Road's Title V permit. This Semi-Annual report includes a certification signed by a Responsible Official which is provided in **Appendix A**. In accordance with the NESHAP for Landfills, this report is submitted semi-annually.

The Semi-Annual Report pertains to the landfill gas (LFG) collection and control system (GCCS) operated at the Vasco Road Landfill (Vasco Road).

This report includes the following information, as required by BAAQMD Rule 8-34-411:

- All collection system and/or component downtime and reasons for the shutdown (8-34-501.1).
- All emission control system downtime and reason for the shutdown (8-34-501.2).
- Continuous temperature monitoring and dates of any excesses (8-34-501.3 and 507).
- Testing performed to satisfy of the requirements of this Rule (8-34-501.4).
- Monthly LFG flow rates and excesses (8-34-501.5).
- Collection and emission control system leak testing and any excesses, action taken to correct excesses, and re-monitored concentrations (8-34-501.6 and 503).
- Landfill surface monitoring, location of excesses, excess concentration, date discovered, actions taken to repair the excess, and re-monitored concentrations (8-34-501.6 and 506).
- Annual waste acceptance rate and the current amount of waste in-place (8-34-501.7).
- Records of non-degradable waste, if area is excluded from LFG collection (8-34-501.8).
- Well head monitoring including gauge pressure, LFG temperature, and LFG oxygen concentration (8-34-501.9 and 505).
- Continuous flow monitoring (8-34-501.10).

Information summarizing the monitoring activities associated with the above-listed items is provided in the following sections.

## **2.0 SITE BACKGROUND INFORMATION**

The Vasco Road Landfill (Vasco or Site) is located in Livermore, California and is owned and operated by Vasco Road, LLC. The municipal solid waste (MSW) landfill is located on Vasco Road about three miles north of Interstate 580 in an unincorporated portion of eastern Alameda County north of the City of Livermore. The landfill lies within the Northern Diablo Range along the Altamont Anticline. The Landfill was permitted in 1962 and began accepting waste circa 1963. The 323-acre site is currently in operation, accepting nonhazardous solid waste and inert waste.

### **2.1 EXISTING AIR PERMITS**

Vasco maintains a BAAQMD permit to operate (PTO) (Plant No. 5095), which includes conditions for the wellfield, collection system, and flare station (Condition No. 818). This condition incorporates all applicable requirements from NSPS Subpart WWW and BAAQMD Rule 8-34, which are addressed in this report. Vasco Road also maintains a Title V Permit (Facility No. A5059), which was most recently renewed in February 4, 2019. The current permit is a Title V revision permit issued on November 6, 2019, expiring in February 3, 2024.

A GCCS Design Plan was prepared for the site to review and determine the adequacy of the existing LFG system. The current design of the system was determined to be adequate to comply with both NSPS and BAAQMD Rule 8-34 requirements. The system design is based on the density of wells calculated to sufficiently extract the maximum flow of LFG generated, according to the United States (U.S.) Environmental Protection Agency (EPA) LFG emissions model (LandGEM). The GCCS is designed to control surface emissions, as well as to minimize subsurface lateral migration of LFG. Both the perimeter of the landfill and the landfill surface are monitored on a quarterly basis. Additional details regarding the GCCS are in the GCCS Design Plan that was previously submitted to the BAAQMD. A drawing showing the existing GCCS is provided in **Appendix B**.

### **2.2 EXISTING LANDFILL GAS COLLECTION AND CONTROL SYSTEM**

The GCCS at Vasco Road consists of extraction wells used to collect the LFG from within the landfill (the “wellfield”) and a piping system (the “collection system”) used to convey the collected LFG to the control systems for destruction. The LFG is extracted from the landfill through a combination of vertical gas extraction wells and horizontal gas extraction trenches/pipes, as well as leachate from collection system components.

A landfill gas to energy (LFGTE) facility, which is permitted by the BAAQMD separately from Vasco as facility No. 20432, has been the primary control system for Vasco’s collected LFG since it began commercial operation in approximately 2012. The LFGTE facility is owned and operated by Ameresco Vasco Road, LLC (Ameresco). The flare station, which is operated and maintained by Vasco Road, LLC, consists of one enclosed flare (A-4) which act as supplementary emission control and/or backup control devices in the event that the LFGTE facility goes offline.

In the event the LFGTE facility goes offline and the LFG flare goes off-line concurrently, an automatic valve is actuated that prevents LFG flow to the control systems. As a result, LFG flow from the

collection system ceases entirely, such that there is no free-venting of uncombusted LFG to the atmosphere.

A diagram of the GCCS displaying system component locations is shown in the site plan(s) provided in **Appendix B**.

## **3.0 MONITORING AND RECORDS**

### **3.1 CONTINUOUSLY MONITORED PARAMETERS**

According to BAAQMD Rule 8-34-301.1, the GCCS must be operated continuously. To comply with this requirement, the landfill owner/operator is required to maintain full-time operation of the GCCS, including individual extraction wells. Downtime for any of these components must be reported in the Rule 8-34 Semi-Annual Report. This information is summarized below and in the attached tables. Records of continuously monitored parameters are available for review at the site.

#### **3.1.1 Gas Extraction System Downtime**

During the reporting period, the LFG extraction system was off-line on several occasions for a total of 61.03 hours. Shutdowns involved pre-programmed or manual system shutdowns for inspection, maintenance and/or repair of the GCCS, and thus meet the criteria for allowed GCCS downtime, as specified in Rule 8-34-113 and in accordance with the BAAQMD November 5, 2018 Compliance Advisory, with the exception of the event that occurred on October 25 through October 27, 2020 which involved a Pacific Gas and Electric (PG&E) Public Safety Power Shutoff (PSPS) power outage.

Vasco verbally reported the breakdown to the BAAQMD via the after-hours reporting hotline on October 25, 2020 at approximately 20:51. Furthermore, a Reportable Compliance Activity (RCA) form was submitted to the BAAQMD on October 26, 2020 to request breakdown relief and to report the parametric excursion. On the same day, the BAAQMD issued RCA IDs 07W26 and 07W27 for the breakdown and excursion, respectively. On November 4, 2020, Tetra Tech submitted a Combined 10/30-Day Title V Report and Notification for RCA IDs 07W26 and 07W27 to the BAAQMD.

The typical operating scenario involves the LFGTE facility acting as the primary control device and the A-4 flare acting as backup or supplemental control. In addition, if the LFGTE facility goes offline unexpectedly in the middle of the night, LFGTE facility staff must drive to the site and perform inspection and maintenance of their system prior to the LFGTE facility and/or LFG flare re-starting, as re-starting these control systems without someone first inspecting or conducting maintenance on these systems could cause damage to the systems. Republic staff are alerted each time the LFGTE facility goes offline, and during each shutdown, Republic staff are in close communications with LFGTE facility staff regarding their inspections and maintenance of the LFGTE facility system and their estimates on when the GCCS can be brought back online. On four occasions during the reporting period, the LFGTE facility shut down in the middle of the night when no LFGTE facility staff were onsite. In all four of these instances, either the LFGTE facility was re-started prior to Republic arriving onsite, or Republic was in the process of starting the flare when the LFGTE facility came back online.

A summary of the GCCS downtime for this reporting period is provided in **Table 1a**, including the date, reason for the downtime, description of the corrective measure(s) implemented to resume GCCS operation, and the total elapsed time for each event. Gas extraction system downtime records are available for review at the site.



### 3.1.2 Emission Control System Downtime

#### A-4 Flare

During the reporting period, the flare was off-line on several occasions. A summary of A-4 flare downtime is provided in **Table 1b**, including the date, reason for the downtime, and the total elapsed time for each event. Note that the LFGTE facility acts as the primary control device and the majority of collected LFG is sent to this facility. As a result, the flare has been offline on a regular basis. In the event the LFGTE facility shuts down, or additional control is required, the flare acts as a backup control device. In the event the LFGTE facility and the flare go offline concurrently, the collection system will automatically shut down resulting in the entire GCCS going offline. During the reporting period, the flare was offline over a cumulative period of approximately 3616.90 hours. Emission control system downtime records are available for review at the site.

As previously noted, whenever the LFGTE facility and the flare are offline concurrently, LFG flow to the control systems is automatically stopped. Therefore, during this reporting period, there were no instances during which LFG flow passed through the control devices uncontrolled (i.e., free venting), and the collected LFG stream was never diverted from the control devices.

#### LFGTE Facility

During the reporting period, individual IC engines were offline on several occasions. In addition, there were several periods when the entire LFGTE facility was offline (both engines were offline concurrently). Downtime logs, which include individual IC engine shut downs, are included in **Appendix C**.

### 3.1.3 Individual Well Downtime

In some instances, the entire GCCS may not go off-line, but individual extraction wells may be taken off-line for inspection, maintenance, and/or repair, as well as for other unforeseen circumstances. These are generally planned events, although such events can occur without notice. During the reporting period, several wells were temporarily taken offline or were taken offline during a previous reporting period and remained offline for a portion of the reporting period due to active filling occurring in their vicinity.

No wells were taken off-line during the reporting period. One (1) well (VRLEW131) was abandoned during the reporting period due to poor gas production.

Pursuant to permit condition No. 818, Part 2b, the owner/operator must notify the District of expected installation or decommissioning dates prior to commencing any component alterations. On November 25, 2020, a Well Decommissioning Notification Letter was submitted to the BAAQMD for the decommissioning of VRLEW131.

Details of individual well shutdown and well startups occurring during the reporting period are provided in **Table 2**. Please see the Semi-Annual Startup, Shutdown, and Malfunction (SSM) Report included as Section II of this report for additional details.

### **3.1.4 Flow Meter and Temperature Gauge Downtime**

The continuous operation of the GCCS is measured through the continuous measurement of LFG flow to the flare and the flare combustion temperature. As required by Rule 8-34, the Vasco flare is equipped with a flow measuring device and a temperature gauge that provide continuous readout displays using digital chart recorders. During the reporting period, the flow meter and temperature gauge/recorder at the flare station did not go out of operation due to malfunction or other breakdown conditions. Continuous monitoring and calibration information are available for review at the site.

### **3.1.5 Flare Combustion Zone Temperature**

Vasco Road is required by permit condition No. 818, Part 5 to operate the flare (A-4) in such a manner that the combustion zone temperature within the flare does not drop below the permitted limit of 1,402 degrees Fahrenheit (°F) (averaged over a 3-hour period) or a higher or lower temperature based on the most recent source test. During the reporting period, the minimum temperature above which the flare was required to operate was 1,568°F (source test results minus 82°F), based on the source test results in the test report dated May 28, 2020.

During the reporting period, the flare operated above the permitted limit of 1,402°F at all times, except during periods of SSM. The flare operating records also indicated that the flare combustion zone temperature did not drop below 1,568°F on a three-hour average basis while in operation.

Flare temperature records are available for review at the site. Excerpts from the May 28, 2020 source test report, summarizing the test results for the flare are provided in **Appendix D** of this report.

## **3.2 COMPONENT LEAK QUARTERLY MONITORING**

During the reporting period, quarterly testing of the GCCS components for any leaks with a methane concentration of greater than 1,000 parts per million by volume (ppmv), as required by BAAQMD Rule 8-34-503, was conducted. Testing in the wellfield and at the flare station was performed using an organic vapor analyzer (OVA), which was calibrated on the same day as the testing. Monitoring results and calibration records are provided in **Appendix E** and are available for review at the site.

### **3.2.1 Third Quarter 2020 Monitoring**

Tetra Tech conducted the component leak testing of the wellfield and flare station on July 28 and August 4, 2020. No component leaks above 1,000 ppmv were detected in the wellfield or at the flare station during the third quarter 2020 monitoring event.

### **3.2.2 Fourth Quarter 2020 Monitoring**

Tetra Tech conducted the component leak testing of the wellfield and flare station on October 5, 6, and 20, 2020. No component leaks above 1,000 ppmv were detected in the wellfield or at the flare station during the fourth quarter 2020 monitoring events.

### 3.3 CONTROL EFFICIENCY

LFG flare A-4 was also tested on April 15, 2020 to demonstrate compliance with the control efficiency standard of 98 percent NMOC destruction efficiency or outlet concentration of 30 ppmv of NMOC as methane (for flares) as required by BAAQMD Rules 8-34-301.3, 8-34-412, 8-34-501.4, and Condition # 818, Part 20. The NMOC destruction efficiency for the April 2020 source test was measured to be >96.84 percent by weight, and the NMOC as methane concentration in the flare outlet was <6.2 ppmv. As such, flare A-4 is in compliance with the aforementioned rules and permit condition by meeting the exhaust ppmv limit.

Excerpts from the April 2020 source test report dated May 28, 2020, summarizing the test results, are provided in **Appendix D** of this report.

### 3.4 LANDFILL SURFACE EMISSIONS MONITORING

Surface emissions monitoring (SEM) was conducted at Vasco Road on a quarterly basis during the reporting period, in accordance with BAAQMD Rule 8-34-303 and 8-34-506. The SEM events were conducted in accordance with the SEM plan in the landfill's GCCS Design Plan. Testing was performed using a Trimble SiteFID Landfill Gas Monitor Portable Flame Ionization Detector (FID), which was calibrated the same day as the testing. The results of this monitoring are summarized below. Reports for each quarterly monitoring event are provided in **Appendix E**. Records of SEM are available for review at the site.

#### 3.4.1 Third Quarter 2020 Monitoring

Tetra Tech field technicians monitored the landfill surface for leaks with a methane concentration of greater than 500 ppmv above background on July 28, 29, 30, and 31, 2020. Surface emissions in excess of 500 ppmv were detected at six (6) locations during the third quarter 2020 monitoring event. The locations with the exceedances and associated methane concentrations are provided in the third quarter 2020 SEM report (**Appendix E**).

Tetra Tech field technicians performed appropriate corrective actions, including flow increases to the surrounding extraction wells, cover repairs, and installation of borehole emission control systems. Tetra Tech completed the 10-day re-monitoring event for these locations on August 6, 2020. All the locations were under the 500 ppmv threshold and thus back in compliance. Tetra Tech performed the 1-month re-monitoring event, as required by NSPS, on August 18, 2020, and all locations remained in compliance.

#### 3.4.1 Fourth Quarter 2020 Monitoring

Tetra Tech monitored the landfill surface for leaks with a methane concentration of greater than 500 ppmv above background on October 5, 6, 7, and 8, 2020. Surface emissions in excess of 500 ppmv were detected at six (6) locations during the fourth quarter 2020 monitoring event. The locations with the exceedances and associated methane concentrations are provided in the fourth quarter 2020 SEM report (**Appendix E**).

Tetra Tech field technicians performed appropriate corrective actions, including flow increases to the surrounding extraction wells and borehole repairs. Tetra Tech completed the 10-day re-monitoring event for these locations on October 13, 2020. All the locations were under the 500 ppmv threshold

and thus back in compliance. Tetra Tech performed the 1-month re-monitoring event, as required by NSPS, on October 30, 2020, and all locations remained in compliance.

## 3.5 WELLHEAD MONTHLY MONITORING

Monthly wellhead monitoring for pressure, temperature, and oxygen content was conducted by Tetra Tech from August through December 2020 and by SCSFS for January 2021 to comply with BAAQMD Rule 8-34-305 and 9-34-414. The results of this monitoring are summarized below. Wellhead exceedances are provided in **Table 3, 4, and 5**.

Please note that during the reporting period, all wells were monitored.

### 3.5.1 Pressure

The majority of the operational extraction wells were under negative pressure during the monitoring events conducted during the reporting period, in accordance with BAAQMD Rule 8-34-305 and 8-34-414. For any wells that exhibited positive pressure during this reporting period, the identification number and dates that each well was operating with positive pressure are provided in **Table 3**. The table also includes corrective action and re-monitoring results. In all instances, corrective action and re-monitoring were performed in accordance with the 5- and 15-day requirements specified in the NSPS regulations and in Rule 8-34.

No wells demonstrated a positive pressure reading at the end of the reporting period.

### 3.5.2 Oxygen

Vasco has elected to use oxygen as its compliance standard under Rule 8-34-305, rather than nitrogen. Per Vasco's PTO Condition No. 818, Part 3b(ii), the oxygen concentration limit does not apply to the wells listed below, provided that the oxygen concentration in the LFG at the main header does not exceed five percent oxygen by volume (dry basis) and the methane concentration in the LFG at the main header is greater than 35 percent by volume (dry basis). The oxygen Higher Operating Value (HOV) is approved for wells: EW-9 (VRLFEW09), EW-27 (VRLFEW27), EW-31A (VRLFEW31A), EW- 33A (VRLEW33A), and EW- 41R (VRLFEW41).

Pursuant to Title V Permit Condition 818, Part 3c(i-iv) the four vertical leachate recirculation wells (VRLRW001, VRLRW002, VRLRW003, and VRLRW004), and two vertical LFG extraction wells (VR12GT4R and VR12GT05) operate on a non-continuous basis and are subject to an alternative oxygen wellhead standard. Oxygen concentrations in these wells may not exceed 15 percent by volume. The wells may be disconnected from the vacuum system if the oxygen concentration is above 15 percent or the temperature is greater than 131 °F.

The majority of the wells were operating within the regulatory limit of five (5) percent oxygen during the monitoring events conducted during the reporting period. The dates when wells were operating with excessive oxygen, and the well identification number, corrective actions, and re-monitoring results for these wells are provided in **Table 4**.

As of the end of the reporting period, all of the operating wells were operating with an oxygen concentration below the 5 or 15 percent limit except for wells VR12GT03, VR12GT05, VREW0907, VREW1001, VREW1003, VRLEW130, VRLEW138, and VRLEW93A. These wells will be returned to

below the 5 or 15 percent limit as specified in BAAQMD Rule 8-34-414, and compliance will be documented in the next semi-annual report.

As of the end of the previous reporting period, no wells were operating with an oxygen concentration above the 5 percent limit.

### **3.5.3 Temperature**

BAAQMD Rule 8-34-305 requires the landfill gas temperature in each wellhead to measure less than 55 degrees Celsius (°C) or 131°F. However, Condition No. 818, Part 3b(i) in Vasco's BAAQMD PTO allows Vasco to operate wells EW- 9 (VRLFEW09), EW- 33A (VRLEW33A), and EW-44 (VRLFEW44) at an alternative temperature of 140°F.

The majority of wells were operating within their respective limits of 131°F or 140°F during the monitoring events conducted during the reporting period. The dates when wells were operating above their respective temperature limits, and the well identification number, correction actions, and re-monitoring results for these wells are provided in **Table 5**.

As of the end of the reporting period, all the active wells were operating with temperature limits below their respective limits except for wells VREW126A, VREW2001, and VRLEW133. These wells will be returned to below the 131°F or 140°F limit as specified in BAAQMD Rule 8-34-414, and compliance will be documented in the next semi-annual report.

As of the end of the previous reporting period, no wells were operating with a temperature higher than 131°F.

## **3.6 COVER INTEGRITY MONITORING**

Under BAAQMD Rule 8-34-510 and the NSPS, the landfill surface must be monitored at least monthly for evidence of cracks or other surface integrity issues, which could allow for surface emissions. During the reporting period, cover integrity monitoring was conducted by Tetra Tech personnel and SCSFS in conjunction with the wellhead monitoring on August 25, September 16, 23, and 25, October 28, November 24, December 23, 2020, and January 4, 2021 using procedures specified in the GCCS Design Plan. The observations during these monitoring events indicated the landfill surface was in good condition. In the event visual evidence suggested otherwise, the surface will be promptly repaired. Records of cover integrity monitoring are available for review upon request.

## **3.7 GAS GENERATION ESTIMATE AND MONTHLY LANDFILL GAS FLOW RATES**

The Vasco Road GCCS has been operating under BAAQMD Regulation 8-34-404 (Less Than Continuous Operation) as of November 19, 2014.

Pursuant to Application Number (A/N) 26049 Condition 818 Part 1 (b), the owner/operator may operate the A-4 Flare on a less than continuous basis. If the three-month rolling average of LFG methane content exceeds 50 percent, the owner/operator shall attempt to restart the A-4 Flare within one week of discovery of this excess. If the restart is successful, the A-4 Flare shall operate continuously until the remaining amount of LFG available for flaring is less than 800 standard cubic

feet per minute (scfm) or the equivalent heat input rate for this excess LFG is less than 24 million British thermal units per hour (MMBTU/hour). The rolling average methane content is currently being calculated using the average of the inlet readings collected onsite.

### **3.8 ANNUAL WASTE ACCEPTANCE RATE AND REFUSE IN PLACE**

Vasco Road is an active landfill that continues to accept refuse for disposal. From August 1, 2020 through January 31, 2021, the site accepted 284,350.48 tons of decomposable waste and cover material, resulting in a cumulative waste-in-place total of 18,200,326.71 tons as of January 31, 2021.

#### **3.8.1 Non-Degradable Waste Areas**

No areas of non-degradable waste deposition are known to exist. There are no landfill areas that are excluded from the collection system requirements.

## SECTION II. SSM PLAN REPORT

As mentioned previously, Vasco Road is subject to 40 CFR Part 63, Subpart AAAAA, the NESHAPS for MSW Landfills. Vasco Road maintains a SSM Plan which documents the procedures for operating and maintaining the affected elements of the GCCS during startup, shutdown, and malfunction (SSM). The SSM events that occurred during the reporting period of August 1, 2020 through January 31, 2021 are documented in this section.

During the reporting period, there were nine (9) SSM events involving shutdown of the entire GCCS. None of these events were planned startups/shutdowns and nine (9) of these startup/shutdown events were associated with a malfunction of the GCCS.

During the reporting period, there was one (1) SSM events involving the wellfield as one well was permanently decommissioned due to poor gas quality. There were no wells offline from previous reporting periods that remained offline for all or a portion of the reporting period. There were no malfunctions of any of the wellfield components during the reporting period.

During the reporting period, there were no planned startups/shutdowns or malfunctions of LFG monitoring equipment (e.g. flow measuring/recording device, temperature measuring/recording device).

In each case described above, the SSM Plan was successfully implemented. Specific information regarding these SSMs are included in **Tables 1a (GCCS Downtime), 1b (A-4 Flare Downtime), and 2 (Individual Well Startup, Shutdown, and Decommissions)**.

No revisions were made to the SSM Plan during this reporting period. A copy of the SSM Plan and all revisions/addenda are kept on file at the facility for at least five (5) years and are available to appropriate regulatory agency personnel for inspection.

### **SECTION III. TITLE V SEMI-ANNUAL REPORT**

As specified in 40 Code of Federal Regulation (CFR) Part 70, reports of any required monitoring must be submitted at least every 6 months. All instances of deviations from permit requirements for the semi-annual reporting period, specified in the Landfill's Initial Title V Permit as August 1 through January 31 and February 1 through July 31, must be clearly identified in each report. This Title V Report covers the August 1, 2020 through January 31, 2021 reporting period.

This report has been prepared based on Table VII (Applicable Limits and Compliance Monitoring Requirements) of the Landfill's MFR Permit. The report includes a certification by a responsible official, consistent with §70.5(d).

The full Title V Semi-Annual Report, including certification by a responsible official, is provided as **Appendix F**.



## **SECTION IV. ANNUAL TITLE V COMPLIANCE CERTIFICATION**

A Title V Annual Compliance Certification has been prepared for the annual period specified in the Title V permit. The annual certification period for this report extends from February 1, 2020 to January 31, 2021.

As specified in 40 CFR Part 70, the compliance certification shall include all of the following:

- The identification of each federally-enforceable term or condition of the permit that is the basis of the certification;
- The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; and
- The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent.

The full Compliance Certification is provided as **Appendix G**.

## Tables

**Table 1a. GCCS Downtime  
Vasco Road Landfill, Livermore, California  
(August 1, 2020 through January 31, 2021)**

GCCS Shutdown	Restarted	Downtime Hours	Reason for Downtime	Corrective Actions Taken
8/17/20 0:14	8/17/20 12:32	12.30	The Ameresco Facility experienced an unplanned shutdown due to TSA / H2S / Siloxane Removal. The A-4 Flare automatically shutdown due to flame failure, the flare remained offline to allow for the continuous operation of the power generating facility as pre-programmed.	The Ameresco Engines were restarted.
9/6/20 18:24	9/6/20 18:48	0.40	Ameresco's Engine 1 experienced an unplanned shutdown due to engine issues. Engine 2 experienced an unplanned shutdown due to extreme weather. The A-4 Flare automatically shutdown to allow for the continuous operation of the power generating facility as pre-programmed.	The A-4 Flare was brought online to operate as back-up device while engine maintenance completed.
10/9/20 17:57	10/9/20 18:02	0.08	Ameresco's Engine 1 and 2 experienced an unplanned shutdown due to oxygen levels. The A-4 Flare automatically shutdown to allow for the continuous operation of the power generating facility as pre-programmed.	The Ameresco Engines were restarted.
10/12/20 12:39	10/12/20 12:46	0.12	Ameresco's Engine 1 and 2 experienced an unplanned shutdown due to oxygen levels. The A-4 Flare automatically shutdown to allow for the continuous operation of the power generating facility as pre-programmed.	The Ameresco Engines were restarted.
10/25/20 20:15	10/27/20 14:38	42.38	Ameresco's Engine 1 and 2 experienced an unplanned shutdown due to extreme weather conditions causing a malfunction of the power utility. The A-4 Flare automatically shutdown to allow for the continuous operation of the power generating facility on October 23, 2020. While not in operation, the landfill facility had a power shutdown due to a Pacific Gas and Electric (PG&E) Public Safety Power Shutoff (PSPS) event.	On October 26, 2020, PG&E crews were assigned to the site to patrol power lines and to inspect equipment for possible damage. Power restoration was initially estimated to occur on October 26, 2020 by 22:00, however, PG&E extended the PSPS event in response to ongoing severe weather conditions, with a revised restoration estimate of October 27, 2020 by 17:00. On October 27, 2020 at approximately 14:30, power was restored to the facility and operations and maintenance (O&M) personnel restarted the A-4 Flare at approximately 14:38 on the same day. O&M personnel conducted additional inspection and maintenance at the flare station prior to restart and no additional issues were discovered. Vasco verbally reported the breakdown to the Bay Area Air Quality Management District (BAAQMD) via the after-hours reporting hotline on October 25, 2020 at approximately 20:51. Furthermore, a Reportable Compliance Activity (RCA) form was submitted to the BAAQMD on October 26, 2020 to request breakdown relief and to report the parametric excursion. On the same day, the BAAQMD issued RCA IDs 07W26 and 07W27 for the breakdown and excursion, respectively. On November 4, 2020, Tetra Tech submitted a Combined 10/30-Day Title V Report and Notification for RCA IDs 07W26 and 07W27 to the BAAQMD.

**Table 1a. GCCS Downtime  
Vasco Road Landfill, Livermore, California  
(August 1, 2020 through January 31, 2021)**

11/2/20 10:39	11/2/20 10:46	0.12	The Ameresco Facility experienced an unplanned shutdown due to TSA / H2S / Siloxane Removal. The A-4 Flare automatically shutdown to allow for the continuous operation of the power generating facility as pre-programmed.	The Ameresco Engines were reconfigured and restarted.
11/17/20 8:50	11/17/20 12:10	3.33	The Ameresco's Engine 1 and 2 experienced an unplanned shutdown due to landfill vacuum/limited gas. The A-4 Flare automatically shutdown to allow for the continuous operation of the power generating facility as pre-programmed.	The Ameresco Engines were replaced and restarted.
11/17/20 21:12	11/17/20 22:28	1.27	Ameresco's Engine 1 and 2 experienced an unplanned shutdown due to building/ HVAC issues. he A-4 Flare automatically shutdown to allow for the continuous operation of the power generating facility as pre-programmed.	The Ameresco Engines were restarted.
12/16/20 9:14	12/16/20 10:16	1.03	Ameresco's Engine 1 experienced a planned shutdown due to engine issues. Engine 2 experienced an unplanned shutdown due to landfill vacuum/limited gas. The A-4 Flare was manually shutdown for flare maintenance.	The Ameresco Engines were replaced and restarted.
<b>Total:</b>			61.03	
There was no GCCS Downtime in January 2021.				

Notes:

**Events in bold type denotes Malfunction Events**

TSA = temperature swing adsorption, H2S = hydrogen sulfide, HVAC = Heating, Ventilation, and Air Conditioning

Downtimes listed represent periods when all landfill gas combustion devices were offline concurrently (no gas flow from the collection system).

The GCCS Downtime information was taken from Tetra Tech's monthly operating reports (MORs) for the reporting period.

All events listed involved GCCS inspection and/or maintenance activities prior to start up (or as soon as feasible following programmed startups) in accordance with Rule 8-34-113 requirements and the BAAQMD Compliance Advisory for Municipal Solid Waste Landfills, dated November 5, 2018, with the exception of the event that occurred on October 25 through October 27, which involved a PG&E PSPS power outage.

**Table 1b. Flare (A-4) Downtime  
Vasco Road Landfill, Livermore, California  
(August 1, 2020 through January 31, 2021)**

<b>Shutdown<sup>1</sup></b>	<b>Startup<sup>1</sup></b>	<b>Downtime Hours</b>	<b>Reason for Downtime</b>
8/1/20 0:00	8/6/20 9:22	129.37	Automatic shutdown to allow for the continuous operation of the power generating facility.*
8/6/20 9:58	8/6/20 10:06	0.13	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/7/20 22:24	8/10/20 11:56	61.53	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/10/20 12:02	8/10/20 12:04	0.03	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/10/20 12:06	8/10/20 12:12	0.10	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/12/20 10:44	8/16/20 6:40	91.93	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/16/20 22:00	8/17/20 12:32	14.53	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/17/20 19:30	8/17/20 19:50	0.33	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/18/20 9:48	8/18/20 10:38	0.83	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/20/20 23:58	8/21/20 10:12	10.23	Automatic shutdown to allow for the continuous operation of the power generating facility.
<b>8/21/20 10:24</b>	<b>8/21/20 10:34</b>	<b>0.17</b>	<b>Automatic shutdown due to low temperature.</b>
8/22/20 21:14	8/25/20 8:50	59.60	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/25/20 23:40	8/26/20 8:04	8.40	Automatic shutdown to allow for the continuous operation of the power generating facility.
<b>8/26/20 8:18</b>	<b>8/26/20 16:12</b>	<b>7.90</b>	<b>Automatic shutdown due to low temperature.</b>
8/26/20 18:44	8/27/20 8:04	13.33	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/27/20 9:28	8/28/20 12:44	27.27	Automatic shutdown to allow for the continuous operation of the power generating facility.
8/28/20 15:00	9/2/20 9:18	114.30	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/2/20 21:42	9/3/20 9:00	11.30	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/4/20 0:00	9/6/20 18:48	66.80	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/7/20 0:46	9/8/20 7:40	30.90	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/8/20 7:52	9/8/20 9:26	1.57	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/9/20 6:26	9/16/20 8:54	170.47	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/18/20 0:30	9/22/20 9:06	104.60	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/23/20 0:44	9/23/20 9:12	8.47	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/23/20 22:54	9/24/20 6:18	7.40	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/24/20 6:38	9/24/20 11:20	4.70	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/24/20 12:46	9/30/20 7:08	138.37	Automatic shutdown to allow for the continuous operation of the power generating facility.
9/30/20 7:22	9/30/20 8:04	0.70	Manual shutdown due to power plant maintenance.
10/1/20 18:58	10/2/20 11:44	16.77	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/2/20 12:30	10/5/20 9:54	69.40	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/5/20 11:02	10/7/20 8:58	45.93	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/7/20 10:42	10/7/20 11:06	0.40	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/7/20 16:24	10/8/20 9:22	16.97	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/8/20 9:34	10/8/20 9:40	0.10	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/8/20 10:00	10/8/20 10:12	0.20	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/8/20 10:30	10/8/20 11:28	0.97	Automatic shutdown to allow for the continuous operation of the power generating facility.

**Table 1b. Flare (A-4) Downtime**  
**Vasco Road Landfill, Livermore, California**  
**(August 1, 2020 through January 31, 2021)**

Shutdown <sup>1</sup>	Startup <sup>1</sup>	Downtime Hours	Reason for Downtime
10/8/20 11:30	10/8/20 11:36	0.10	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/8/20 11:52	10/8/20 12:08	0.27	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/8/20 12:16	10/9/20 10:58	22.70	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/9/20 13:18	10/9/20 18:02	4.73	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/9/20 22:38	10/12/20 11:36	60.97	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/12/20 11:58	10/12/20 12:46	0.80	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/12/20 13:30	10/13/20 9:04	19.57	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/13/20 16:34	10/14/20 15:48	23.23	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/14/20 22:56	10/15/20 6:36	7.67	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/15/20 10:00	10/19/20 9:38	95.63	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/19/20 9:40	10/19/20 9:42	0.03	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/19/20 9:44	10/19/20 9:52	0.13	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/19/20 9:54	10/19/20 10:14	0.33	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/19/20 16:20	10/22/20 9:20	65.00	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/22/20 9:22	10/22/20 9:46	0.40	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/23/20 7:10	10/27/20 14:38	103.47	Automatic shutdown to allow for the continuous operation of the power generating facility.
10/30/20 17:20	11/2/20 10:46	65.43	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/2/20 13:12	11/3/20 11:28	22.27	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/3/20 16:20	11/9/20 9:50	137.50	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/9/20 12:06	11/12/20 13:08	73.03	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/12/20 13:42	11/17/20 12:10	118.47	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/17/20 13:08	11/17/20 22:28	9.33	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/17/20 23:48	11/18/20 9:40	9.87	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/18/20 15:38	11/20/20 11:36	43.97	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/20/20 14:58	11/23/20 10:30	67.53	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/23/20 10:44	11/23/20 10:52	0.13	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/23/20 17:02	11/24/20 9:40	16.63	Automatic shutdown to allow for the continuous operation of the power generating facility.
11/24/20 21:54	12/9/20 11:24	349.50	Automatic shutdown to allow for the continuous operation of the power generating facility.
12/9/20 12:34	12/9/20 12:38	0.07	Automatic shutdown to allow for the continuous operation of the power generating facility.
12/9/20 18:56	12/10/20 9:14	14.30	Automatic shutdown to allow for the continuous operation of the power generating facility.
12/10/20 19:00	12/14/20 8:28	85.47	Automatic shutdown to allow for the continuous operation of the power generating facility.
12/14/20 9:24	12/15/20 10:50	25.43	Automatic shutdown to allow for the continuous operation of the power generating facility.
12/15/20 13:22	12/16/20 7:56	18.57	Automatic shutdown to allow for the continuous operation of the power generating facility.
12/16/20 9:14	12/16/20 10:16	1.03	Manual shutdown for flare maintenance.
12/16/20 16:14	12/21/20 9:30	113.27	Automatic shutdown to allow for the continuous operation of the power generating facility.
12/21/20 19:20	12/23/20 9:02	37.70	Automatic shutdown to allow for the continuous operation of the power generating facility.

**Table 1b. Flare (A-4) Downtime  
Vasco Road Landfill, Livermore, California  
(August 1, 2020 through January 31, 2021)**

Shutdown <sup>1</sup>	Startup <sup>1</sup>	Downtime Hours	Reason for Downtime
<b>12/23/20 9:36</b>	<b>12/23/20 9:46</b>	<b>0.17</b>	<b>Automatic shutdown due to high temperature.</b>
<b>12/23/20 9:48</b>	<b>12/23/20 9:52</b>	<b>0.07</b>	<b>Automatic shutdown due to low temperature.</b>
12/23/20 13:38	12/24/20 9:14	19.60	Automatic shutdown to allow for the continuous operation of the power generating facility.
12/24/20 16:20	1/4/21 12:10	259.83	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/4/21 15:58	1/4/21 16:14	0.27	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/5/21 1:24	1/5/21 7:38	6.23	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/6/21 20:02	1/7/21 11:18	15.27	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/8/21 2:16	1/8/21 5:46	3.50	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/8/21 9:14	1/8/21 10:30	1.27	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/8/21 14:32	1/12/21 8:28	89.93	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/12/21 20:10	1/18/21 7:54	131.73	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/19/21 6:42	1/19/21 8:22	1.67	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/19/21 16:22	1/21/21 8:48	40.43	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/21/21 17:22	1/22/21 8:16	14.90	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/22/21 9:30	1/22/21 12:20	2.83	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/22/21 15:06	1/22/21 15:54	0.80	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/22/21 18:00	1/25/21 14:40	68.67	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/25/21 20:46	1/26/21 9:50	13.07	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/26/21 17:04	1/28/21 10:28	41.40	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/28/21 23:50	1/29/21 13:04	13.23	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/29/21 19:30	1/30/21 12:08	16.63	Automatic shutdown to allow for the continuous operation of the power generating facility.
1/30/21 23:08	2/1/21 0:00	24.87	Automatic shutdown to allow for the continuous operation of the power generating facility.
<b>Total</b>		<b>3616.90</b>	

**Notes:**

**Events in bold type denotes Malfunction Events**

<sup>1</sup>The A-4 flare was offline at the beginning and end of the reporting period. For reporting purposes, the shutdown and startup is calculated as having started on August 1, 2020 at 0:00 and ended on February 1, 2021 at 0:00.

\*Per the Startup, Shutdown, and Malfunction (SSM) forms, a flare flame failure shutdown is due to limited gas available while acting as a back-up device to the engine plant. A-4 flare operated during all instances when the flow rate to the power generating facility was less than 1,200 scfm, in accordance with PTO Condition 818 Part 1(a). In addition, the A-4 flare only operated intermittently when the conditions in Part 1(b) were met.

All events where the entire GCCS was offline listed involved GCCS inspection and/or maintenance activities prior to start up (or as soon as feasible following programmed startups) in accordance with Rule 8-34-113 requirements and the BAAQMD Compliance Advisory for Municipal Solid Waste Landfills, dated November 5, 2018, with the exception of the event that occurred on October 25 through October 27, which involved a PG&E PSPS power outage.

**Table 2. Individual Well Startups, Shutdowns and Decommissions  
Vasco Road Landfill, Livermore, California  
(August 1, 2020 through January 31, 2021)**

Well ID	Shutdown	Start-up	Days Offline	Reason for Shutdown/Startup
VRLEW131	11/24/20 10:18	NA	NA	Well Permanently Decommissioned Due to Poor Gas Quality
VRLEW104	1/19/21 11:00	1/19/21 15:00	0.17	Well Temporarily Taken Offline Due to Installation of a Supplemental Vacuum Pipeline
VRLF EW19	1/19/21 11:00	1/19/21 15:00	0.17	Well Temporarily Taken Offline Due to Installation of a Supplemental Vacuum Pipeline
VRLF EW83	1/21/21 7:30	1/21/21 9:30	0.08	Well Temporarily Taken Offline Due to Installation of a Supplemental Vacuum Pipeline
VREW1009	1/21/21 7:30	1/21/21 9:30	0.08	Well Temporarily Taken Offline Due to Installation of a Supplemental Vacuum Pipeline
VRLF EW23	1/21/21 10:30	1/21/21 12:30	0.08	Well Temporarily Taken Offline Due to Installation of a Supplemental Vacuum Pipeline
VRLF EW81	1/21/21 10:30	1/21/21 12:30	0.08	Well Temporarily Taken Offline Due to Installation of a Supplemental Vacuum Pipeline
VRLF EW84	1/21/21 14:00	1/21/21 16:00	0.08	Well Temporarily Taken Offline Due to Installation of a Supplemental Vacuum Pipeline
VRLF EW25	1/21/21 14:00	1/21/21 16:00	0.08	Well Temporarily Taken Offline Due to Installation of a Supplemental Vacuum Pipeline

Note: All well downtime events listed are consistent with applicable Rule 8-34 provisions and BAAQMD permit conditions.



**Table 3. Wells with Positive Pressure  
Vasco Road Landfill, Livermore, California  
(August 1, 2020 through January 31, 2021)**

Well ID	Date and Time	Initial Static Pressure ("H <sub>2</sub> O)	Adjusted Static Pressure ("H <sub>2</sub> O)	Comments
VREW120A	1/4/2021 13:04	1.25	0.26	Adjusted Valve
VREW120A	1/4/2021 13:07	-0.11	-0.1	In Compliance
VREW126A	1/21/2021 10:53	-1.09	0.17	Adjusted Valve
VREW126A	1/21/2021 10:54	-1.16	-1.14	In Compliance
VRL0604R	12/9/2020 14:14	-0.02	0.02	Adjusted Valve
VRL0604R	12/10/2020 9:27	-0.54	-0.55	In Compliance
VRLEW104	12/9/2020 14:58	0.22	0.3	Adjusted Valve
VRLEW104	12/10/2020 9:34	-0.35	-0.38	In Compliance
VRLEW107	1/19/2021 11:04	0.17	0.24	Adjusted Valve
VRLEW107	1/19/2021 11:16	-0.32	-0.3	In Compliance
VRLEW147	12/14/2020 14:09	-0.01	0.01	Adjusted Valve
VRLEW147	12/18/2020 13:16	-0.82	-0.87	In Compliance
VRLFEW84	12/9/2020 15:03	0.63	0.74	Adjusted Valve
VRLFEW84	12/10/2020 9:39	-0.35	-0.35	In Compliance
VRLFEW84	12/21/2020 13:49	0.72	0.71	Adjusted Valve
VRLFEW84	12/23/2020 10:29	-0.47	-0.41	In Compliance

Note: All required corrective action and remonitoring was completed in accordance with Rule 8-34 and NSPS timelines.

**Table 4. Wells with Oxygen Exceedances  
Vasco Road Landfill, Livermore, California  
(August 1, 2020 through January 31, 2021)**

Well ID	Date and Time	Oxygen (%)	Comments
VR12GT03	9/23/2020 13:06	10.5	Adjusted Valve
VR12GT03	9/23/2020 13:08	10.0	Second Reading
VR12GT03	10/1/2020 15:20	9.3	Adjusted Valve
VR12GT03	10/19/2020 12:05	1.1	In Compliance
VR12GT03	12/21/2020 13:40	5.1	Adjusted Valve
VR12GT03	12/21/2020 13:42	3.2	Second Reading
VR12GT03	1/4/2021 12:36	5.3	Adjusted Valve
VR12GT03	1/4/2021 12:42	8.5	In Compliance
VR12GT03	1/19/2021 10:41	12.6	Adjusted Valve
VR12GT03	1/19/2021 10:44	13.1	Second Reading
VR12GT05*	9/23/2020 12:55	12.2	Adjusted Valve
VR12GT05*	9/23/2020 12:58	12.8	Second Reading
VR12GT05*	10/1/2020 14:53	16.3	Adjusted Valve
VR12GT05*	10/19/2020 12:38	3.7	In Compliance
VR12GT05*	1/19/2021 11:42	18.4	Adjusted Valve
VR12GT05*	1/19/2021 11:45	18.0	Second Reading
VR12LR01	9/23/2020 13:00	17.3	Adjusted Valve
VR12LR01	9/23/2020 13:01	18.2	Second Reading
VR12LR01	10/14/2020 17:07	0.0	In Compliance
VR12LR01	1/19/2021 11:33	7.7	Adjusted Valve
VR12LR01	1/19/2021 11:38	4.8	In Compliance
VREW0906	12/9/2020 14:19	20.0	Adjusted Valve
VREW0906	12/9/2020 14:21	20.1	Second Reading
VREW0906	12/21/2020 12:18	19.9	Adjusted Valve
VREW0906	1/5/2021 10:18	0.0	In Compliance
VREW0907	1/19/2021 13:51	9.3	Adjusted Valve
VREW0907	1/19/2021 13:53	8.2	Second Reading
VREW1001	12/14/2020 14:28	7.6	Adjusted Valve
VREW1001	12/14/2020 14:30	4.0	In Compliance
VREW1001	12/24/2020 9:42	7.9	Adjusted Valve
VREW1001	12/28/2020 9:35	4.0	In Compliance
VREW1001	1/5/2021 10:53	15.7	Adjusted Valve
VREW1001	1/5/2021 10:59	9.3	Second Reading
VREW1001	1/19/2021 14:04	3.2	In Compliance
VREW1001	1/21/2021 11:19	9.8	Adjusted Valve
VREW1001	1/21/2021 11:21	6.2	Second Reading

**Table 4. Wells with Oxygen Exceedances  
Vasco Road Landfill, Livermore, California  
(August 1, 2020 through January 31, 2021)**

Well ID	Date and Time	Oxygen (%)	Comments
VREW1003	1/5/2021 11:51	11.2	Adjusted Valve
VREW1003	1/5/2021 11:53	9.6	Second Reading
VREW1003	1/19/2021 13:25	20.6	Adjusted Valve
VREW1003	1/19/2021 13:27	20.6	Second Reading
VREW1003	1/21/2021 11:34	20.0	Adjusted Valve
VREW1003	1/21/2021 11:37	20.1	Second Reading
VRL0601R	12/14/2020 10:46	18.1	Adjusted Valve
VRL0601R	12/14/2020 10:47	17.7	Second Reading
VRL0601R	12/23/2020 12:21	1.8	In Compliance
VRLEW130	12/21/2020 15:41	6.3	Adjusted Valve
VRLEW130	12/21/2020 15:42	9.3	Second Reading
VRLEW130	12/31/2020 11:42	14.0	Adjusted Valve
VRLEW130	12/31/2020 11:43	11.5	Second Reading
VRLEW130	1/5/2021 9:47	18.7	Adjusted Valve
VRLEW130	1/5/2021 9:49	17.4	Second Reading
VRLEW130	1/19/2021 13:19	8.7	No change
VRLEW130	1/19/2021 13:20	8.3	Second Reading
VRLEW131	8/11/2020 14:20	20.0	Adjusted Valve
VRLEW131	8/11/2020 14:22	20.8	Second Reading
VRLEW131	8/21/2020 15:55	10.5	Adjusted Valve
VRLEW131	9/2/2020 12:50	10.7	Second Reading
VRLEW131	9/16/2020 12:18	10.2	Adjusted Valve
VRLEW131	10/7/2020 12:56	9.6	Adjusted Valve
VRLEW131	10/28/2020 16:19	13.9	Adjusted Valve
VRLEW131	11/3/2020 14:19	13.2	Adjusted Valve
VRLEW131	11/24/2020 10:18	12.7	Well Permanently Decommissioned on 11/24/20 due to Poor Gas Production
VRLEW138	12/24/2020 10:04	11.6	Adjusted Valve
VRLEW138	12/28/2020 9:31	12.5	Adjusted Valve
VRLEW138	1/12/2021 9:28	10.5	Adjusted Valve
VRLEW138	1/12/2021 9:29	10.1	Second Reading
VRLEW138	1/19/2021 14:17	13.0	Adjusted Valve
VRLEW138	1/19/2021 14:18	16.0	Second Reading
VRLEW38A	1/6/2021 11:41	10.3	Adjusted Valve
VRLEW38A	1/6/2021 11:43	10.1	Second Reading
VRLEW38A	1/19/2021 11:51	2.1	In Compliance
VRLEW68A	1/6/2021 11:25	6.7	Adjusted Valve
VRLEW68A	1/6/2021 11:29	4.6	In Compliance
VRLEW93A	12/14/2020 13:55	6.7	Adjusted Valve
VRLEW93A	12/14/2020 13:57	5.7	Second Reading
VRLEW93A	12/23/2020 14:14	4.9	In Compliance

**Table 4. Wells with Oxygen Exceedances  
Vasco Road Landfill, Livermore, California  
(August 1, 2020 through January 31, 2021)**

Well ID	Date and Time	Oxygen (%)	Comments
VRLEW93A	1/19/2021 13:20	14.1	Adjusted Valve
VRLEW93A	1/19/2021 13:21	17.2	Second Reading
VRLEW93A	1/21/2021 11:10	11.0	Adjusted Valve
VRLEW93A	1/21/2021 11:11	11.9	Second Reading

Note: All required corrective action and monitoring was completed in accordance with Rule 8-34 and NSPS timelines

\*Pursuant to Title V Permit Condition 818, Part 3c(i-iv), the well noted with an asterick operates on a non-continuous basis and is subject to an alternative oxygen wellhead standard of 15% O<sub>2</sub>.

**Table 5. Wells with Temperature Exceedances  
Vasco Road Landfill, Livermore, California  
(August 1, 2020 through January 31, 2021)**

Well ID	Date and Time	Initial Temp [°F]	Adjusted Temp [°F]	Comments
VREW126A	8/6/2020 12:08	136.2	136.2	Adjusted Valve
VREW126A	8/6/2020 12:10	136	136	Second Reading
VREW126A	8/19/2020 12:06	136.6	136.6	Adjusted Valve
VREW126A	8/19/2020 12:15	136.9	136.9	Second Reading
VREW126A	9/2/2020 12:04	135.5	135.7	Adjusted Valve
VREW126A	9/16/2020 11:29	135.9	135.7	Second Reading
VREW126A	10/7/2020 12:09	135.3	135.3	Adjusted Valve
VREW126A	10/19/2020 13:14	113.2	113.2	In Compliance
VREW126A	1/19/2021 12:29	132.7	132.6	Adjusted Valve
VREW126A	1/21/2021 10:53	135.3	135.4	Adjusted Valve
VREW126A	1/21/2021 10:54	135.4	135.5	Second Reading
VREW2001	8/6/2020 12:41	133	133	Adjusted Valve
VREW2001	8/6/2020 12:42	133	132.8	Second Reading
VREW2001	8/19/2020 12:38	133.3	133.2	Adjusted Valve
VREW2001	9/2/2020 12:25	132.1	132.1	Adjusted Valve
VREW2001	9/8/2020 14:36	132.4	127.4	Adjusted Valve, In Compliance
VREW2001	1/19/2021 12:33	131.8	132	Adjusted Valve
VREW2001	1/21/2021 10:59	133.1	133.1	Adjusted Valve
VREW2001	1/21/2021 11:00	133	133.1	Second Reading
VRLEW133	8/6/2020 12:55	134	135	Adjusted Valve
VRLEW133	8/6/2020 12:57	135.3	135.3	Second Reading
VRLEW133	8/11/2020 12:46	139.1	139.1	Adjusted Valve
VRLEW133	8/19/2020 12:45	139.2	139.1	Adjusted Valve
VRLEW133	9/2/2020 12:35	139.3	139.3	Adjusted Valve
VRLEW133	9/16/2020 12:01	139.4	139.4	Adjusted Valve
VRLEW133	10/1/2020 15:05	129.3	117	In Compliance
VRLEW133	1/5/2021 9:30	134.5	134.4	Adjusted Valve
VRLEW133	1/5/2021 9:32	133.9	134	Second Reading
VRLEW133	1/19/2021 13:29	136.3	136.5	Adjusted Valve
VRLEW133	1/19/2021 13:33	135.2	135.1	Second Reading
VRLEW133	1/21/2021 10:15	138.6	138.6	Adjusted Valve
VRLEW133	1/21/2021 10:16	138.6	138.6	Second Reading

Note: All required corrective action and remonitoring was completed in accordance with Rule 8-34 and NSPS timelines.

## Appendix A – Responsible Official Certification Form

Certification of Truth and Accuracy and Completeness:

I certify the following:

Based on the information and belief formed after reasonable inquiry, the information in this document are true, accurate, and complete:

*Matthew D Ketchem*

\_\_\_\_\_  
Signature of Responsible Official

2-25-2021

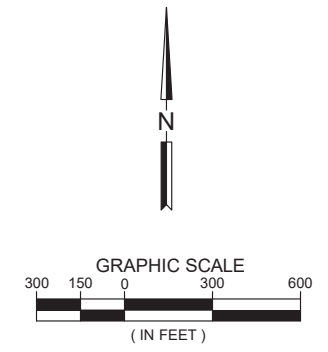
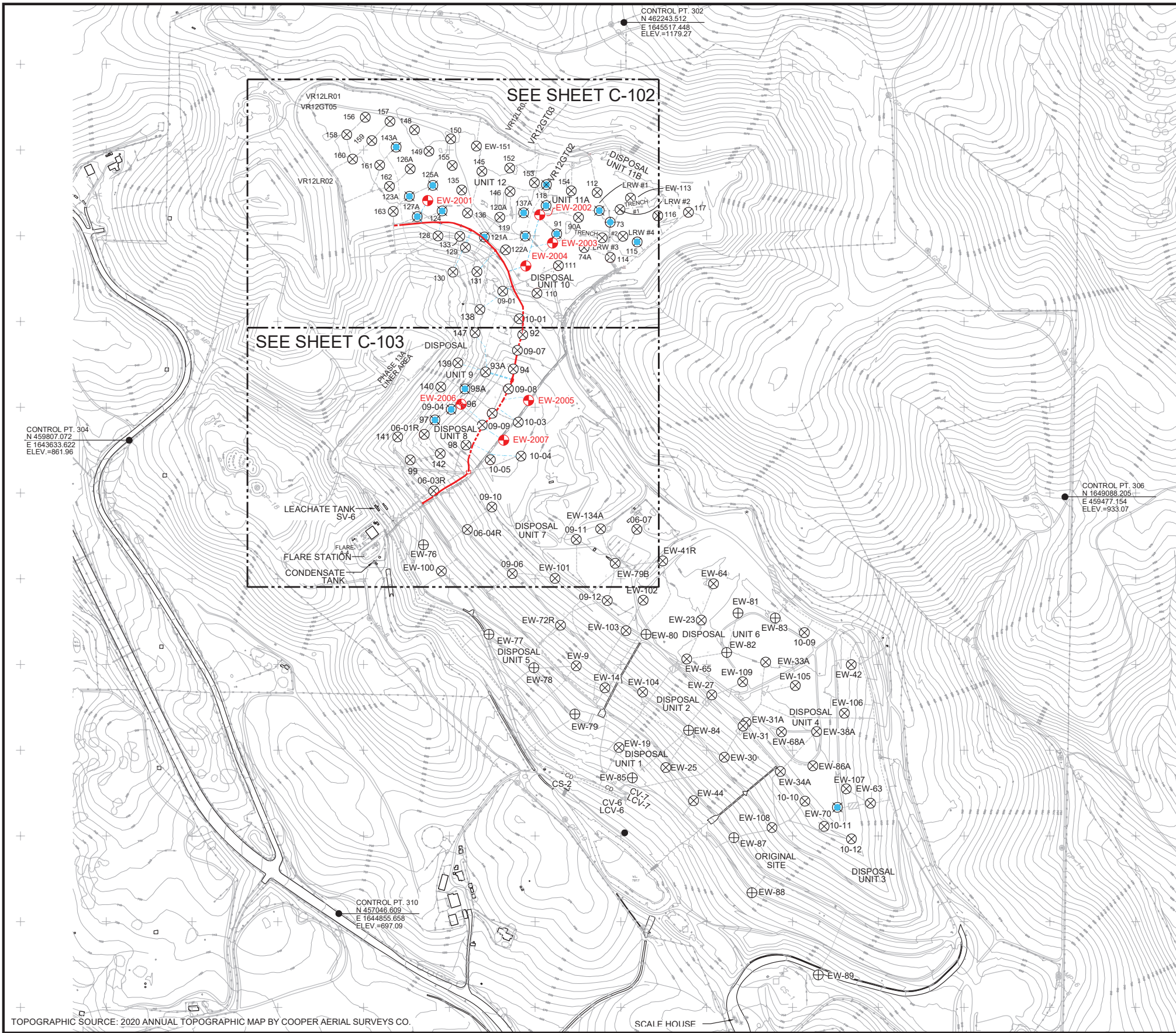
\_\_\_\_\_  
Date

Matt Ketchem

\_\_\_\_\_  
Name of Responsible Official

## Appendix B – Existing GCCS Layout





**LEGEND**

- ⊗ EXISTING VERTICAL GAS EXTRACTION WELL
- ⊕ NEW VERTICAL GAS EXTRACTION WELL
- EXISTING ABOVE GRADE HEADER/LATERAL/DRAIN LINE
- - - EXISTING BELOW GRADE HEADER/LATERAL
- NEW 12" HDPE GAS HEADER, ON GRADE
- - - NEW 12" HDPE GAS HEADER, BELOW GRADE
- - - NEW 6" HDPE GAS LATERAL, BELOW GRADE
- ⊕ EXISTING WELL/COLLECTOR TO BE DECOMMISSIONED (SEE DETAIL 2/C-503)

**SITE SURVEY CONTROL POINTS**

PANEL NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
301	463655.679	1643780.065	855.24	TARGET
302	462243.512	1646517.448	1179.27	TARGET
303	463373.270	1649133.063	1364.74	TARGET
304	459807.072	1643633.622	861.96	TARGET
306	459477.154	1649088.205	933.07	TARGET
309	455726.591	1648751.590	759.42	TARGET
310	457046.609	1644855.658	697.09	TARGET
41	455967.608	1646421.652	653.22	TARGET
51	457517.915	1646521.900	754.95	TARGET

**MAP DATUM**

HORIZONTAL DATUM: NAD27  
 VERTICAL DATUM: NGVD29  
 COORDINATE SYSTEM: CALIFORNIA STATE PLANE  
 ZONE: III  
 UNITS: US SURVEY FEET

TOPOGRAPHIC SOURCE: 2020 ANNUAL TOPOGRAPHIC MAP BY COOPER AERIAL SURVEYS CO.

**RECORD DRAWING**

VASCO ROAD LANDFILL  
 2020 GCCS IMPROVEMENTS  
 SITE PLAN/SURVEY CONTROL/INDEX TO PLAN SHEETS

DESIGNED BY: S. ANGUS	SCALE: AS SHOWN
DRAWN BY: S. ANGUS	DATE: 5/2020
CHECKED BY: S. AYASS, P.E.	DATE: 5/2020
APPROVED BY: G.E. ANDRAOS	DATE: 5/2020
FILE NO.: C-101	SHEET C-101

NO.	REVISION DESCRIPTION	BY:



WASTE COLLECTION · RECYCLING · TRANSFER · DISPOSAL



21700 Copley Drive, Suite 200  
 Diamond Bar, CA 91765  
 TEL 909.860.7777 FAX 909.860.8017

I:\Projects\2020\2020 GCCS Improvements\Drawings\C-101.dwg 5/20/20 10:30:48 acd.rgs

## Appendix C – LFGTE Facility Downtime Logs

**AFFECTED EQUIPMENT: Ameresco Engine Plant**

**Vasco Road Landfill - Livermore, California  
SSMP REPORT - From August 1 through August 31, 2020**

Shutdown Date/Time	Startup Date/Time	Duration (Hours)	Engines		Type	Reason	Maintenance
			1	2			
8/12/20 8:03	8/12/20 10:26	2.38		X	Proactive	Engine	Replace, and Restart
8/13/20 8:43	8/13/20 10:20	1.62		X	Proactive	Engine	Replace, and Restart
8/16/20 7:42	8/16/20 21:09	13.45		X	Unplanned	BOP Control System	Reconfigure, and Restart
8/16/20 7:42	8/16/20 21:55	14.22	X		Unplanned	BOP Control System	Reconfigure, and Restart
8/17/20 0:14	8/17/20 18:17	18.05		X	Unplanned	TSA / H2S / Siloxane Removal	Restart Only
8/17/20 0:14	8/17/20 17:22	17.13	X		Unplanned	TSA / H2S / Siloxane Removal	Restart Only
8/18/20 22:24	8/19/20 9:28	11.07		X	Unplanned	BOP Control System	Restart Only
8/18/20 22:24	8/19/20 9:46	11.37	X		Unplanned	BOP Control System	Restart Only
8/19/20 18:08	8/19/20 21:37	3.48		X	Unplanned	Accidental Transfer Trip	Restart Only
8/19/20 18:08	8/19/20 21:23	3.25	X		Unplanned	Accidental Transfer Trip	Restart Only
8/26/20 8:00	8/26/20 18:32	10.53		X	Planned	Engine	Replace, and Restart
8/27/20 8:01	8/27/20 9:20	1.32		X	Proactive	Engine	Reconfigure, and Restart
8/28/20 12:41	8/28/20 14:53	2.20	X		Unplanned	Engine	Replace, and Restart

TOTAL ENGINE DOWNTIME AUGUST 1 THROUGH AUGUST 31, 2020	110.07
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BOP = blowout preventer, TSA = temperature swing adsorption, H2S = hydrogen sulfide

**AFFECTED EQUIPMENT: Ameresco Engine Plant**

**Vasco Road Landfill - Livermore, California  
SSMP REPORT - From September 1 through September 30, 2020**

Shutdown Date/Time	Startup Date/Time	Duration (Hours)	Engines		Type	Reason	Maintenance
			1	2			
9/3/20 11:31	9/3/20 14:16	2.75	X		Proactive	Engine	Replace, and Restart
9/3/20 14:43	9/3/20 14:53	0.17	X		Proactive	Engine	Restart Only
9/3/20 15:02	9/3/20 15:21	0.32	X		Proactive	Engine	Replace, and Restart
9/6/20 17:11	9/7/20 0:42	7.52	X		Unplanned	Engine	Replace, and Restart
9/6/20 18:24	9/6/20 22:14	3.83		X	Unplanned	Extreme Weather	Restart Only
9/6/20 22:14	9/6/20 22:14	0.00		X	Unplanned	Engine	Restart Only
9/8/20 7:33	9/8/20 14:40	7.12	X		Proactive	Blower Skid	Replace, and Restart
9/23/20 7:24	9/23/20 15:47	8.38	X		Planned	Engine	Replace, and Restart
9/24/20 4:36	9/24/20 6:28	1.87	X		Unplanned	Engine	Restart Only
9/24/20 11:17	9/24/20 12:41	1.40	X		Proactive	Engine	Restart Only
9/30/20 7:05	9/30/20 9:39	2.57		X	Proactive	Engine	Replace, and Restart

TOTAL ENGINE DOWNTIME SEPTEMBER 1 THROUGH SEPTEMBER 30, 2020	35.92
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**AFFECTED EQUIPMENT: Ameresco Engine Plant**

**Vasco Road Landfill - Livermore, California  
SSMP REPORT - From October 1 through October 31, 2020**

Shutdown Date/Time	Startup Date/Time	Duration (Hours)	Engines		Type	Reason	Maintenance
			1	2			
10/2/20 11:39	10/2/20 12:17	0.63		X	Proactive	Engine	Replace, and Restart
10/5/20 9:51	10/5/20 10:56	1.08		X	Proactive	Engine	Replace, and Restart
10/9/20 17:57	10/9/20 19:14	1.28		X	Unplanned	Oxygen Levels	Restart Only
10/9/20 17:57	10/9/20 19:17	1.33	X		Unplanned	Oxygen Levels	Restart Only
10/12/20 11:27	10/12/20 11:48	0.35		X	Unplanned	Oxygen Levels	Restart Only
10/12/20 12:26	10/12/20 12:37	0.18		X	Unplanned	Oxygen Levels	Restart Only
10/12/20 12:38	10/12/20 13:21	0.72		X	Unplanned	Oxygen Levels	Restart Only
10/12/20 12:39	10/12/20 13:20	0.68	X		Unplanned	Oxygen Levels	Restart Only
10/15/20 5:59	10/15/20 7:00	1.02	X		Unplanned	Oxygen Levels	Restart Only
10/25/20 20:15	10/27/20 20:01	47.77		X	Unplanned	Extreme Weather	Restart Only
10/25/20 20:15	10/27/20 19:48	47.55	X		Unplanned	Extreme Weather	Restart Only
10/30/20 12:57	10/30/20 15:50	2.88	X		Unplanned	Blower Skid	Restart Only
10/30/20 12:57	10/30/20 15:41	2.73		X	Unplanned	Blower Skid	Restart Only
10/30/20 15:52	10/30/20 16:27	0.58	X		Unplanned	Blower Skid	Restart Only
10/30/20 15:52	10/30/20 16:17	0.42		X	Unplanned	Blower Skid	Restart Only
10/30/20 16:20	10/30/20 16:33	0.22		X	Unplanned	Engine	Restart Only
10/30/20 16:36	10/30/20 16:37	0.02		X	Unplanned	Engine	Restart Only
10/30/20 16:42	10/30/20 17:14	0.53		X	Unplanned	Engine	Replace, and Restart

TOTAL ENGINE DOWNTIME OCTOBER 1 THROUGH OCTOBER 31, 2020	109.98
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**AFFECTED EQUIPMENT: Ameresco Engine Plant**

**Vasco Road Landfill - Livermore, California  
SSMP REPORT - From November 1 through November 30, 2020**

Shutdown Date/Time	Startup Date/Time	Duration (Hours)	Engines		Type	Reason	Maintenance
			1	2			
11/2/20 10:39	11/2/20 13:03	2.40	X		Proactive	TSA / H2S / Siloxane Removal	Reconfigure, and Restart
11/2/20 10:39	11/2/20 13:04	2.42		X	Proactive	TSA / H2S / Siloxane Removal	Reconfigure, and Restart
11/9/20 9:42	11/9/20 11:59	2.28		X	Proactive	Engine	Replace, and Restart
11/16/20 11:52	11/16/20 12:58	1.10		X	Unplanned	Oxygen Levels	Restart Only
11/16/20 12:58	11/16/20 12:58	0.00		X	Unplanned	Engine	Restart Only
11/17/20 8:50	11/17/20 13:03	4.22	X		Unplanned	Landfill Vacuum / Gas Limited	Replace, and Restart
11/17/20 8:50	11/17/20 12:39	3.82		X	Unplanned	Landfill Vacuum / Gas Limited	Restart Only
11/17/20 21:12	11/17/20 23:25	2.22	X		Unplanned	Building / HVAC	Restart Only
11/17/20 21:12	11/18/20 0:05	2.88		X	Unplanned	Building / HVAC	Restart Only
11/17/20 23:47	11/18/20 0:11	0.40	X		Unplanned	Engine	Restart Only
11/18/20 0:05	11/18/20 0:05	0.00		X	Unplanned	Engine	Restart Only
11/18/20 9:12	11/18/20 15:32	6.33		X	Planned	Engine	Replace, and Restart
11/18/20 9:49	11/18/20 13:28	3.65	X		Proactive	Blower Skid	Replace, and Restart
11/18/20 13:37	11/18/20 13:49	0.20	X		Proactive	Engine	Restart Only

TOTAL ENGINE DOWNTIME NOVEMBER 1 THROUGH NOVEMBER 30, 2020	31.92
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TSA = temperature swing adsorption, H2S = hydrogen sulfide  
HVAC = Heating, Ventilation, and Air Conditioning

**AFFECTED EQUIPMENT: Ameresco Engine Plant**

**Vasco Road Landfill - Livermore, California**

**SSMP REPORT - From December 1 through December 31, 2020**

Shutdown Date/Time	Startup Date/Time	Duration (Hours)	Engines		Type	Reason	Maintenance
			1	2			
12/15/20 10:47	12/15/20 13:12	2.42	X		Proactive	Engine	Replace, and Restart
12/16/20 7:53	12/16/20 16:00	8.12	X		Planned	Engine	Replace, and Restart
12/16/20 9:08	12/16/20 12:43	3.58		X	Unplanned	Landfill Vacuum / Gas Limited	Replace, and Restart

TOTAL ENGINE DOWNTIME DECEMBER 1 THROUGH DECEMBER 31, 2020	14.12
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Eng	Start Time	End Time	Duration (HH:MM)	Eng Hours	Operator	Type	Cause	Reason	Maintenance
2	1/12/21 11:38	1/12/21 12:00	0:22	44208	Michael Rogers	Proactive	Ameresco	Engine	Restart Only
1	1/19/21 7:22	1/19/21 13:25	6:03	44215	Michael Rogers	Unplanned	Landfill / Wellfield	Oxygen Levels	Restart Only
2	1/19/21 11:04	1/19/21 12:14	1:10	44215	Michael Rogers	Proactive	Ameresco	BOP Control System	Replace, and Restart
2	1/19/21 12:16	1/19/21 12:35	0:19	44216	Michael Rogers	Unplanned	Landfill / Wellfield	Landfill Vacuum / Gas Limited	Restart Only
1	1/21/21 7:58	1/21/21 9:02	1:04	44217	Mike Rogers	Unplanned	Landfill / Wellfield	Landfill Vacuum / Gas Limited	Restart Only
2	1/21/21 7:58	1/21/21 9:03	1:05	44217	Mike Rogers	Unplanned	Landfill / Wellfield	Landfill Vacuum / Gas Limited	Restart Only
2	1/29/21 13:01	1/29/21 15:18	2:17	44226	Mike Rogers	Proactive	Ameresco	Engine	Replace, and Restart



Appendix D – Excerpts from 2020 Source Test Results (report dated  
May 28, 2020)

## **Republic Services**

**BAAQMD PLANT NO: A5095**

### **Compliance Emissions Test Report #20111** **Perennial Flare (A-4)**

**Located at:**

Vasco Road Landfill  
4001 North Vasco Rd  
Livermore, CA 94551

**Prepared For:**

Republic Services  
Lochlin Caffey  
3260 Blume Drive, Suite 200  
Richmond, CA 94806  
LCaffey2@republicservices.com

**For Submittal To:**

Marco Hernandez & Gloria Espena  
The Bay Area Air Quality Management District  
375 Beale Street, Suite 600  
San Francisco, CA 94105  
mhernandez@baaqmd.gov & gespena@baaqmd.gov  
sourcetest@baaqmd.gov

**Testing Performed On:**

April 15<sup>th</sup>, 2020

**Final Report Submitted On:**

May 28<sup>th</sup>, 2020

**Performed and Reported by:**

Blue Sky Environmental, Inc.  
624 San Gabriel Avenue  
Albany, CA 94706  
bluesky@blueskyenvironmental.com  
Office (510) 525 1261 / Cell (510) 508 3469



**Blue Sky Environmental, Inc**

**624 San Gabriel Avenue**

**Albany, CA 94706**

*Office (510) 525 1261*

*Cell (510) 508 3469*

*bluesky@blueskyenvironmental.com*

May 28<sup>th</sup>, 2020

Republic Services  
3260 Blume Drive, Suite 200  
Richmond, CA 94806

Attn: Lochlin Caffey

**Subject:** Source test emission report for Flare (A-4) located at the Vasco Road Landfill, 4001 N. Vasco Road, Livermore, CA 94551. Facility #A5095.

**Test Date(s):** April 15<sup>th</sup>, 2020.

**Sampling Location:** The flare is located at the above address. Sampling was conducted via two flange ports in the 153 inch inside diameter flare exhaust stack.

**Sampling Personnel:** Sampling was performed by Chuck Arrivas and Timothy Eandi of Blue Sky Environmental, Inc.

**Observing Personnel:** The BAAQMD were notified in a Source Test Plan dated March 18<sup>th</sup> and revised on April 13<sup>th</sup>, 2020 (NST #5926). There were no representatives from the BAAQMD present during the test program. Max Polkabl of Tetra Tech was present to assist with operations.

**Process Description:** The flare is used to burn landfill gas. The landfill gas flow rate and the flare actual operating temperature are continuously recorded. The flare was operated at a control temperature set-point of 1,620°F with a landfill gas flow rate of ~1,721 standard cubic feet per minute (SCFM). The Flare operating temperature (min/max) values and the landfill gas flow rate (min/max) values are recorded by a Yokogawa recorder onsite.

**Test Program:** The test program was performed while the Flare was controlled on the middle thermocouple at normal operating conditions. The testing was performed to comply with the prevailing permit requirements presented in the following Table.

Three 36-minute tests were performed on the flare. The sampling system was checked for leaks prior to testing, and was calibrated before and after each run with certified calibration gas standards. A stratification traverse was performed during all runs, at 16 points (8 per port).

<b>BAAQMD Source #</b>	(A-4)
<b>Source Description</b>	Flare
<b>Permit Conditions</b>	818-20, 818-21 and parts 8-13
<b>Parameter &amp; Emissions Limits</b>	NO <sub>x</sub> <11 ppm @ 15% O <sub>2</sub> , <0.049 NO <sub>x</sub> Lbs/MMBTU, <141.1 NO <sub>x</sub> lbs/day CO <73 ppm @ 15% O <sub>2</sub> lbs/day, <0.19 CO lbs/MMBtu, <547.2 CO lbs/day NMOC <30 ppm @ 3% O <sub>2</sub> , or D.E. 98% CH <sub>4</sub> DE 99% LFG-TRS <320 ppm

**Sampling & Analytical Methods:** The sampling methods listed below were used.

EPA Method 1	Sample and Traverse Point Determination
EPA Method 3A	O <sub>2</sub> and CO <sub>2</sub> , Stack Gas Molecular Weight
EPA 4 part 16.4	Moisture Calculated
EPA 7E	NO <sub>x</sub> Emissions & NO <sub>2</sub> Converter Efficiency
EPA 10	CO Emissions
EPA Method 19	Calculation of Stack Gas Flow Rate
EPA 25A/ALT-097	THC, CH <sub>4</sub> & NMHC Emissions
ASTM 1945/3588	Fuel Analysis for BTU and F-Factors
EPA 25C	Analysis of landfill gas for TNMHC (NMOC)
EPA TO-15	Analysis for volatile organic species by GCMS

**Sampling & Traverse Points Selection by EPA Method 1.** This method is used to determine the duct or stack area and appropriate traverse points that represent equal areas of the duct for sampling and velocity measurements.

**Stack Gas Molecular Weight by EPA Method 3/3A.** This method is used to determine the molecular weight of the stack gas. Measurements of gas constituents %O<sub>2</sub> and %CO<sub>2</sub> were obtained from the CEMS system.

**Stack Gas Moisture by EPA Method 4-16.4** is an acceptable alternative to EPA Method 4 for the determination of moisture using F-factors. In this case the mole fraction of the moisture in the ambient air is calculated using equations in EPA Method 4-16.4 from 1) the measured ambient relative humidity, ambient temperature and barometric pressure, 2) the mole fraction from free water in the fuel, calculated from the moisture % in the fuel which is determined by the analytical lab to be the balance after all the major gaseous components have been summed, and 3) the mole fraction from the hydrogen in the fuel. To determine the moisture in the fuel, the raw fuel analysis before normalization to 100% is referenced.

**EPA Method 3A (O<sub>2</sub>, CO<sub>2</sub>), 10 (CO) and 7E (NO<sub>x</sub>)** are continuous monitoring techniques using instrumental analyzers. Sampling is performed by extracting exhaust flue gas from the stack, conditioning the sample and analyzing it by continuous monitoring gas analyzers in a CEM test van. The sampling system consists of a stainless steel sample probe, Teflon sample line, glass-fiber particulate filter, glass moisture-knockout condensers in ice, followed by thermoelectric coolers (optional), Teflon sample transfer tubing, diaphragm pump and a stainless steel/Teflon manifold and flow control/delivery system. A constant sample and calibration gas supply pressure of 5 PSI was provided to each analyzer to avoid pressure variable response differences. The entire sampling system was leak checked prior to and at the end of the sampling program.

**EPA Method 19 (gas)** was used to determine stack gas volumetric flow rates using oxygen based F-factors. F-factors are ratios of combustion gas volumes generated from heat input. The heating value of the fuel in Btu per cubic foot is determined from analysis of the fuel gas samples using ASTM D1946/3588 gas chromatography analytical procedures. Total fuel consumption was measured by CARB Method 1, 2, 3 and 4. The total cubic feet per hour of fuel multiplied times the Btu/cf provides million Btu per hour (MMBtu) heat input. The heat input in MMBtu/hr is multiplied by the F-factor (DSCF/MMBtu) and adjusted for the measured oxygen content of the source to determine volumetric flow rate. The flow rates were used to determine emission rates.

**EPA Method 25A/ALT-097:** Sampling for Total Hydrocarbons, Methane and Non-Methane Hydrocarbons. EPA Method 25A (FID/GC Method) employs a heated TECO 55C FID with GC column, heated Teflon sample gas transfer lines to provide a continuous sample to the heated FID/GC Hydrocarbon Analyzer. Heated lines are used to avoid moisture or hydrocarbon condensation. Methane is determined by the calibrated GC method in the TECO 55C NMHC/CH<sub>4</sub>/THC Analyzer. Calibration gases are selected to fall within 25-35%, 45-55% and 80-90% of Range for Methane, Total Hydrocarbon and Non-Methane Hydrocarbons

Calibrations are performed through the probe and entire sample system. The system linearity check was performed prior to testing and during testing and calibration drift checks were performed after every run. All data was corrected according to EPA Method 25A.

The sampling and analytical system (for EPA Methods) was checked for linearity with zero, mid (40-60%) and high span (80-100%) calibrations, and is checked for system bias at the beginning and end of each run. System bias is determined by introducing calibration gas to the probe and pulling it through the entire sampling system. Individual test run calibrations usually use the calibration gas that most closely matches the stack gas effluent. Along with the Sampling System Bias, the Zero and Calibration Drift values were determined for each test. Methods 3A, 7E and 10 all defer to EPA Method 7E for the calculations of effluent concentration, Span, Calibration Gas, Analyzer Calibration Error (Linearity), Sampling System Bias, Zero Drift, Calibration Drift and Response Time. In addition, the NO<sub>x</sub> analyzer NO<sub>2</sub> to NO conversion efficiency check defers to EPA Method 7E for the criteria and procedure.

All calibration gases are EPA Protocol #1. The analyzer data recording system consists of a Honeywell DPR3000 strip chart recorder supported by a Data Acquisition System (DAS).

**EPA Method 25C for NMOC (ROC)** is the method adopted for this because EPA 25A and CARB 100 has complications associated with high methane to NMOC ratios, and EPA 25 is not appropriated for sampling lower than 50 ppm of NMOC and in high CO<sub>2</sub> and Moisture situations. The Method is written for evacuated tank sampling but is adaptable to Tedlar bag sampling procedures as in EPA Method 18, CARB 410 and CARB 422. The sampling equipment comprises a stainless steel or glass lined probe with a short Teflon transfer line in to a tedlar bag housed in a sealed chamber. The chamber is evacuated by pump at a prescribed rate for the test duration and the Tedlar bag capacity so the tedlar bag sample is integrated over the test period. The equipment used for analysis is exactly the same as used in EPA 25 and 25C. The sample is injected into a GC column where the methane and CO<sub>2</sub> are flushed through and removed then the NMOC (ROC) fraction is oxidized to form CO<sub>2</sub> then reduced to methane and analyzed.

**ASTM D1945/3588** gas chromatography analytical procedures. Total fuel consumption for each source is monitored by a dedicated fuel gas meter. The total cubic feet per hour of fuel multiplied times the Btu/cf provides million Btu per hour (MMBtu) heat input. The heat input in MMBtu/hr is multiplied by the F-factor (DSCF/MMBtu) and adjusted for the measured oxygen content of the source to determine volumetric flow rate. The flow rates were used to determine emission rates.

**TO-15 Volatile Organics and Sulfur Compounds by SILCO SUMMA® Canister.** Sampling consists of collecting gases in pre-evacuated 6-Liter SUMMA canisters with pre-set flow controllers set to integrate over the desired test duration. The SUMMA® passivated canisters allow holding times up to 14 days for the TO-15 Method list of volatile organics. The SILCO canisters have a silanized (glass) lining that permits longer holding times (up to 72 hours) for reactive sulfur compounds. The sample gas is drawn by the canister vacuum through a micro-filter, pre-set orifice flow controller and on/off valve into the canister. The canister vacuum is monitored with a vacuum gauge to verify sample collection. In this case, the flow controller consisted of capillary orifice tubing designed to sample for a pre-set duration of 1.0 hrs.

The samples are analyzed for volatile organics by EPA Method TO-15 using GC/MS (gas chromatography/mass spectroscopy) and for tentatively identified compounds, not included in the TO-15 list. The samples were also analyzed for 20 sulfur compounds by ASTM Method D-5504 GC/SCD (gas chromatography/sulfur chemiluminescent detector).

**Instrumentation:** The following continuous emissions analyzers were used:

Instrument	Analyte	Principle
Servomex 1440	O <sub>2</sub>	Paramagnetic
Servomex 1440	CO <sub>2</sub>	IR
TECO 42C	NO <sub>x</sub>	Chemiluminescence
TECO 48C	CO	GFC/IR
TECO 55C	THC/CH <sub>4</sub> /NMOC	GC/FID

**Test Results:** Testing was performed according to the Source Test Plan. All emissions were equal to or below limits. The emission results are presented in Table 1 and Target Toxic Air Contaminant concentrations in the landfill gas are shown in Table 2, and are summarized as follows:

<b>Emission Parameter</b>	<b>Flare (A-4) Average</b>	<b>Limit</b>	<b>Status</b>
NO <sub>x</sub> ppm @ 15% O <sub>2</sub>	10.9	11	PASS
NO <sub>x</sub> lbs/day	53.7	141.1	PASS
NO <sub>x</sub> , lbs/MMBtu	0.044	0.049	PASS
CO, ppm @ 15% O <sub>2</sub>	43.2	73	PASS
CO lbs/day	129.7	547.2	PASS
CO, lbs/MMBtu	0.105	0.19	PASS
TNMHC ppm @ 3% O <sub>2</sub>	<6.2	30	PASS
Landfill Gas TRS as SO <sub>2</sub> ppm	7.09	320	PASS
CH <sub>4</sub> Removal Efficiency	99.727	99	PASS

The appendices are organized as follows:

Calculations

All the calculations performed on the continuous emissions monitoring (CEM) data and flow rate calculations are presented in this section.

Laboratory Reports

All laboratory reports and chain of custody.

Field Data Sheets

All the CEMS data, any transcribed data from the strip charts.

Process Information

Facility Process Data.

Calibration Gas Certifications

Certifications for the calibration gas standards.

Stack Diagram

Sketch or photograph of the stack.

Sample System Diagram

Schematic of the sampling system configuration

Permit to Operate / ATC

Permit to Operate / Authority to Construct

Source Test Plan

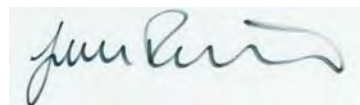
Sampling protocols submitted to the BAAQMD prior to testing

**Comments:** Due to large spikes in the Methane emissions in the stack that exceeded the available calibration gases for the 25A FID (50 PPM range), the testing was instead conducted with a TECO 55C (Modified Method 25A - ALT 097) and the test runs were extended to 36 minutes (18 minutes per port). The measured emissions meet the Permit required limits, no other deviations from the protocol or abnormalities during the test were observed.

The work performed herein was conducted under my supervision, and I certify that: a) the details and results contained within this report are to the best of my knowledge an authentic and accurate representation of the test program: b) that the sampling and analytical procedures and data presented in the report is authentic and accurate: c) that all testing details and conclusions are accurate and valid, and: d) that the production rate and/or heat input rate during the source test are reported accurately.

If this report is submitted for Compliance purposes it should only be reproduced in its entirety. If there are any questions concerning this report, please contact Jeramie Richardson at (810) 923-3181, Chuck Arrivas at (925) 338-4875 or Guy Worthington at (510) 508-3469.

Prepared by



Jessica Morris

Reviewed by,



Chuck Arrivas, QSTI  
Project Manager



**TABLE #1**

**Republic Services Vasco Landfill  
Flare A-4  
Normal**

<b>RUN</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>AVERAGE</b>	<b>LIMITS</b>
Test Date	4/15/20	4/15/20	4/15/20		
Test Time	1240-1322	1355-1438	1510-1600		
Standard Temp., °F	70	70	70		
Flare Temperature, °F Average	1,652	1,650	1,649	1,650	
Fuel Flow Rate, SCFM	1,725	1,721	1,718	1,721	
Fuel Heat Input, MMBTU/Hr	50.6	51.5	51.7	51.3	
Exhaust Flow Rate, DSCFM (Method 19)	28,647	30,160	28,750	29,186	
Oxygen, O <sub>2</sub> , %	15.0	15.2	15.0	15.1	
Carbon Dioxide, CO <sub>2</sub> , %	4.8	4.6	4.8	4.7	
Water Vapor, H <sub>2</sub> O, % M4.16	3.5	3.4	3.5	3.5	
NO <sub>x</sub> , ppm	9.8	10.9	11.4	10.7	
<b>NO<sub>x</sub>, ppm @ 15% O<sub>2</sub></b>	<b>9.9</b>	<b>11.3</b>	<b>11.5</b>	<b>10.9</b>	<b>11</b>
NO <sub>x</sub> , lbs/hr	2.01	2.36	2.35	2.24	
<b>NO<sub>x</sub>, lbs/day</b>	<b>48.2</b>	<b>56.6</b>	<b>56.4</b>	<b>53.7</b>	<b>141.1</b>
<b>NO<sub>x</sub>, lbs/MMBTU</b>	<b>0.040</b>	<b>0.046</b>	<b>0.045</b>	<b>0.044</b>	<b>0.049</b>
CO, ppm	43.3	38.9	45.9	42.7	
<b>CO, ppm @ 15% O<sub>2</sub></b>	<b>43.4</b>	<b>40.2</b>	<b>46.1</b>	<b>43.2</b>	<b>73</b>
CO, lbs/hr	5.38	5.10	5.73	5.40	
<b>CO, lbs/day</b>	<b>129.2</b>	<b>122.5</b>	<b>137.5</b>	<b>129.7</b>	<b>547.2</b>
<b>CO, lbs/MMBTU</b>	<b>0.106</b>	<b>0.099</b>	<b>0.111</b>	<b>0.105</b>	<b>0.19</b>
Inlet H <sub>2</sub> S in fuel, ppm	1.96	<0.095	15.7	5.92	
<b>Inlet TRS in fuel, ppm</b>	<b>3.09</b>	<b>1.19</b>	<b>17.0</b>	<b>7.09</b>	<b>320</b>
THC, ppm (25A) wet	<102.0	<102.0	<102.0	<102.0	
THC, ppm (dry)	<105.7	<105.6	<105.7	<105.7	
THC, lbs/hr as CH <sub>4</sub>	<7.52	<7.91	<7.54	<7.66	
CH <sub>4</sub> , ppm (wet) (M25A)	<100.0	<100.0	<100.0	<100.0	
CH <sub>4</sub> , ppm (dry)	<103.6	<103.5	<32.5	<79.9	
CH <sub>4</sub> , lbs/hr	<7.4	<7.8	<2.3	<5.8	
NMOC, ppm as CH <sub>4</sub>	<2.0	<2.0	<2.0	<2.0	
NMOC, lbs/hr as CH <sub>4</sub>	<0.14	<0.15	<0.14	<0.14	
<b>NMOC, ppm @ 3% O<sub>2</sub> as CH<sub>4</sub></b>	<b>&lt;6.1</b>	<b>&lt;6.3</b>	<b>&lt;6.1</b>	<b>&lt;6.2</b>	<b>30</b>
INLET TNMOC (Method 25C)	944	1,021	1,331	1,099	
INLET NMOC lbs/hr as CH <sub>4</sub>	4.0	4.4	5.7	4.7	<b>or</b>
<b>NMOC Removal Efficiency</b>	<b>96.48%</b>	<b>96.57%</b>	<b>97.49%</b>	<b>96.84%</b>	<b>98</b>
INLET CH <sub>4</sub> , ppm	491,000	501,000	504,000	498,667	
INLET CH <sub>4</sub> lbs/hr	2,102.5	2,140.4	2,149.5	2,131	
<b>CH<sub>4</sub> Removal Efficiency</b>	<b>&gt;99.650%</b>	<b>&gt;99.638%</b>	<b>&gt;99.892%</b>	<b>&gt;99.727%</b>	<b>99</b>
INLET THC (TOC) ppm as CH <sub>4</sub>	491,944	502,021	505,331	499,765	
INLET THC (TOC) lbs/hr as CH <sub>4</sub>	2,107	2,145	2,155	2,135	
<b>THC (TOC) Removal Efficiency</b>	<b>99.643%</b>	<b>99.631%</b>	<b>99.650%</b>	<b>99.642%</b>	<b>98</b>

< Value = 2% of Analyzer Range

**WHERE,**

ppm = Parts Per Million Concentration  
 Lbs/hr = Pound Per Hour Emission Rate  
 Tstd. = Standard Temp. (°R = °F+460)  
 MW = Molecular Weight  
 DSCFM = Dry Standard Cubic Feet Per Minute  
 NO<sub>x</sub> = Oxides of Nitrogen as NO<sub>2</sub> (MW = 46)  
 CO = Carbon Monoxide (MW = 28)  
 TOC = THC = Total Organic Carbon as Methane including CH<sub>4</sub> (MW = 16)  
 THC = Total Hydrocarbons as Methane (MW = 16)  
 NMOC = Total Non-Methane Organic Carbon as Methane (MW = 16)  
 SO<sub>2</sub> = Sulfur Dioxide as SO<sub>2</sub> (MW = 64.1)

**CALCULATIONS,**

PPM @ 15% O<sub>2</sub> = ppm \* 5.9 / (20.9 - %O<sub>2</sub>)  
 PPM @ 3% O<sub>2</sub> = ppm \* 17.9 / (20.9 - %O<sub>2</sub>)  
 Lbs/hr = ppm x 8.223 E-05 x DSCFM x MW / Tstd. °R  
 Lbs/day = Lbs/hr \* 24  
 Removal Efficiency = (inlet lbs/hr- outlet lbs/hr) / inlet lbs/hr  
 SO<sub>2</sub> emission ppm = H2S in fuel \* Fuel Flow/Stack Gas Flow

TABLE # 2

**Republic Services Vasco Landfill  
(A-4) Landfill Gas Toxic Air Contaminants**

<b>RUN</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>LIMITS</b>
Test Date	4/15/20	04/15/20	04/15/20	
Test Time	1242-1320	1357-1438	1515-1553	
Acrylonitrile ppb	<175	<190	<318	
Benzene ppb	804	808	1,490	
Benzyl Chloride ppb	<87.3	<95.0	<159	
Carbon Tetrachloride ppb	<87.3	<95.0	<159	
Chlorobenzene ppb	<87.3	<95.0	<159	
Chlorodifluoromethane ppb	328	392	636	
Chloroethane ppb	<87.3	<95.0	<159	
Chloroform ppb	<87.3	<95.0	<159	
1,1 Dichloroethane ppb	<87.3	<95.0	<159	
1,1 Dichloroethene ppb	<87.3	<95.0	<159	
1,2 Dichloroethane ppb	<87.3	<95.0	<159	
1,4 Dichlorobenzene ppb	<87.3	<95.0	<159	
Dichlorodifluoromethane (CFC-12) ppb	236	239	426	
Dichlorofluoromethane ppb	<87.3	<95.0	161	
Ethylbenzene ppb	1,280	1,400	2,260	
Ethylene Dibromide (1,2 Dibromoethane) ppb	<87.3	<95.0	<159	
Trichlorofluoromethane ppb	<87.3	<95.0	<159	
Hexane ppb	552	583	1,000	
Isopropyl Alcohol (2-Propanol) ppb	3,510	4,470	7,420	
Methyl Ethyl Ketone (2-Butanone)(MEK) ppb	7,830	9,570	15,300	
Methylene Chloride (Dichloromethane) ppb	<175	<190	<318	
Perchloroethylene (Tetrachloroethene) ppb	<87.3	<95.0	<159	
Toluene ppb	3,820	4,400	6,970	
1,1,1 Trichloroethane ppb	<87.3	<95.0	<159	
1,1,2,2 Tetrachloroethane ppb	<87.3	<95.0	<159	
Trichloroethylene (Trichloroethene) ppb	<87.3	<95.0	<159	
Vinyl Chloride ppb	<87.3	<95.0	<159	
Xylenes m & p ppb	1,850	2,010	3,210	
Xylenes o ppb	569	644	963	
<b>ASTM-5504</b>				
Hydrogen Sulfide ppm	1.96	<0.095	15.7	
Carbon Disulfide ppm	<0.087	<0.095	<0.159	
Carbonyl Sulfide ppm	0.364	0.390	0.318	
Dimethyl Sulfide ppm	0.842	0.892	0.981	
Ethyl Mercaptan ppm	<0.087	<0.095	<0.159	
Methyl Mercaptan ppm	<0.087	<0.095	0.337	
<b>Total Reduced Sulfur (TRS) ppm</b>	<b>3.09</b>	<b>1.19</b>	<b>17.0</b>	<b>320</b>

## Appendix E – Surface Emission and GCCS Component Leak Monitoring Results

**VASCO ROAD  
Q-3-20 LFG FLARE COMPONENT LEAK MONITORING**

**INSTRUMENT**

**MAKE:** Thermo Scientific  
**MODEL:** TVA 2020  
**S/N:** 2020-17112964

**DATE OF SAMPLING:** August 4, 2020  
**TECHNICIAN:** Max Polkabila

LOCATION OF LEAK	CONCENTRATION (ppmv)	DATE OF DISCOVERY	TECHNICIAN	ACTION TAKEN TO REPAIR LEAK	DATE OF REPAIR	DATE OF ANY REQUIRED RE-MONITORING	RE-MONITORED CONCENTRATION (ppmv)
KOP	0.0	8/4/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Flanges Vac side	0.0	8/4/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Blowers	0.0	8/4/2020	Max Polkabila	NONE-REQUIRED	N/A	N/A	N/A
instruments	0.0	8/4/2020	Max Polkabila	NONE-REQUIRED	N/A	N/A	N/A
Flanges Pos side	0.0	8/4/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Flame Arrestor	34.0	8/4/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Panels	0.0	8/4/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Flare	0.0	8/4/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Fittings to Blowers	0.0	8/4/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Comments:							
Note:	<p>In the event that an exceedance is detected, please initiate corrective action and re-monitor the exceedance location within 7 days of the initial exceedance.                      Leaks over 500 ppmv methane are exceedances at any component containing landfill gas pursuant to CARB Title 17 of California Code of Regulations Subchapter 10, Article 4, Subarticle 6, Section 95464(b)(1)(B).                      Leaks over 1,000 ppmv methane are exceedances at any component containing landfill gas pursuant to BAAQMD Regulation 8-34-301.2.                      KOP = Knock-Out Pot</p>						

Vasco Road Landfill, Livermore, California

3rd QUARTER LFG COMPONENT LEAK MONITORING - WELLFIELD

SITE: VASCO ROAD  
 INSTRUMENT: IRWIN METHANE LEAK DETECTOR  
 MAKE: INFICON  
 MODEL: IRWIN SX  
 S/N: 92000673

DATE OF SAMPLING: July 28, 2020  
 TECHNICIAN: Field Solutions, Inc.

LOCATION OF LEAK	LEAK CONCENTRATION (ppmv)	DATE OF DISCOVERY	DESCRIPTION OF EQUIPMENT	ACTION TAKEN TO REPAIR LEAK	DATE OF REPAIR	DATE OF ANY REQUIRED RE-MONITORING	RE-MONITORED CONCENTRATION (ppmv)
None							
Comments:							
Note:	In the event that an exceedance is detected, please initiate corrective action and re-monitor the exceedance location within 7 days of the initial exceedance. Leaks over 500 ppmv methane are exceedances at any component containing landfill gas pursuant to CARB Title 17 of California Code of Regulations Subchapter 10, Article 4, Subarticle 6, Section 95464(b)(1)(B). Leaks over 1,000 ppmv methane are exceedances at any component containing landfill gas pursuant to BAAQMD Regulation 8-34-301.2. N/A - Not Applicable LFG - Landfill Gas						



# Vasco Road Landfill

Quarterly Surface Emissions Monitoring Report – Third Quarter 2020





November 3, 2020

**Mrs. Antonia Gunner**  
**Republic Services**  
Vasco Road Landfill  
4001 N Vasco Rd  
Livermore, CA 94551

Subject: Third Quarter 2020 Surface Emissions Monitoring Results for the Vasco Road Landfill, Livermore, CA

Dear Mrs. Gunner:

This report provides results of the third quarter 2020 New Source Performance Standards (NSPS) and California Air Resources Board (CARB) Landfill Methane Rule (LMR) surface emissions monitoring (SEM) performed by Tetra Tech at the Vasco Road Landfill. All work was performed in accordance with Republic Standard Operating Procedures (SOP), NSPS and LMR requirements.

## **SUMMARY AND CONCLUSIONS**

As stipulated in the LMR, if uncorrectable exceedances within the 10-day limitation are detected or emissions are discovered during an inspection by Regulatory Agencies, the landfill must perform monitoring on a 25-foot pathway on a quarterly basis for active disposal sites. If four (4) consecutive quarters of monitoring are performed without any exceedances, as stipulated in the LMR, the landfill may increase the spacing to 100-foot pathways. Therefore, based on the previous monitoring events, in which exceedances were observed, the monitoring at the Vasco Road Landfill was performed on 25-foot pathways in accordance with the LMR.

As required by the LMR, the landfill was divided into 50,000 square foot or less (partial) areas. The Vasco Road Landfill surface area was, therefore, divided into two hundred and thirty-three (233) individual grids as shown in Appendix A.

The third quarter 2020 SEM testing results indicated zero (0) exceedances of the LMR integrated threshold limit of 25 parts per million by volume (ppmv) as measured as methane above background and six (6) locations that exceeded the NSPS (Grids) and LMR (Grids and Penetrations) instantaneous level of 500 ppmv during the initial monitoring event. System adjustments and repair work was performed by Tetra Tech and site personnel. Subsequent re-monitoring occurred within the required timelines from NSPS and LMR. Re-monitoring indicated there were zero (0) locations with remaining instantaneous exceedances. These results are discussed in a subsequent section of this report.

Additionally, during this event, some grids were not monitored as these areas were deemed unsafe by Tetra Tech and site personnel for entry due to active filling operations or soil management operations, which could cause a potential for injury of monitoring personnel as follows:

- Full grids 26, 30, 31, 35, 36, 41, 42, 49, 52, 59, 61, 66, 67, 74, 75, 78, 83, 84, 94, 102, 103, 113, 123, 124, 134, 135, 136, 137, 147, 148, 149, 150, 160, 161, 162, 163, 164, 174, 175, 176, 177, 187, 188, 189, 190, 191, 192, 193, 201, 202, 203, 211, 212, 213, 214, 215, 223, 224, 225, 227, 228, 229, 230, 231, 232, and 233 were not monitored due to active construction, heavy equipment traffic, or steep slopes (steeper than 33.5% or 18 degrees) which resulted in unsafe conditions. (see Appendix A).
- Partial grids 1, 2, 4, 13, 14, 17, 27, 34, 40, 48, 50, 51, 58, 60, 62, 68, 70, 76, 77, 79, 85, 86, 87, 93, 95, 96, 97, 104, 105, 112, 114, 125, 138, 151, 159, 173, 185, 186, 194, 195, 200, 204, 205, 210, 216, 222, and 226 were not monitored due to active construction, heavy equipment traffic, or steep slopes (steeper than 33.5% or 18 degrees) which resulted in unsafe conditions. (see Appendix A).

Areas consisting of native soil (no waste in place) were also exempted from monitoring, in accordance with the LMR.

Any wells located in grids noted as exempt from monitoring due to health and safety concerns that remained accessible were monitored on an as-needed basis.

Excluded areas are provided on the field map in Appendix A.

Further, as required under the LMR, any location on the landfill that has an observed instantaneous methane concentration greater than or equal to 500 ppmv, must be stake-marked and Global Positioning System (GPS) located on a site figure. When concentrations greater than or equal to 500 ppmv are observed during monitoring events, they are reported to site personnel and included in the quarterly report for that event for inclusion into the annual report as required.

Locations with concentrations between 200 ppmv and 499 ppmv are for reporting purposes only and require no remediation, as they are not an exceedance. Two (2) locations were found during the monitoring between the LMR instantaneous recording levels of 200 ppmv to 499 ppmv.

Finally, to help prevent potential future exceedances, Tetra Tech recommends that the landfill surface be routinely inspected, any observed surface erosion be routinely repaired, and flowrates to the destruction devices be maximized.

## **BACKGROUND**

The Vasco Road Landfill is an active organic refuse disposal site. By way of background, organic materials buried in a landfill decompose anaerobically (in the absence of oxygen) producing a combustible gas, which contains approximately 50 to 60 percent methane, 40 to 50 percent carbon dioxide, and trace amounts of various other gases, some of which are odorous. The Vasco Road Landfill property contains a Gas Collection and Control System (GCCS) to control the combustible gases generated in the landfill that may otherwise either vent vertically to the atmosphere or migrate horizontally through subsurface soil to locations on adjacent properties.



## **SURFACE EMISSIONS MONITORING**

Instantaneous and integrated SEM was performed over the surface of the subject site on July 28, 29, 30, and 31, 2020 and August 6 and 18, 2020. The intent of the monitoring was to identify any specific locations or areas of the landfill surface with organic compound concentrations exceeding the NSPS and/or LMR threshold limit values of 500 ppmv measured as methane for instantaneous monitoring, or an average methane concentration of 25 ppmv for the integrated monitoring in the 50,000 square foot grids as required under the LMR. During this event Tetra Tech performed the monitoring on 25-foot pathways in all accessible areas, in accordance with the rules as required.

## **EMISSIONS TESTING INSTRUMENTATION/CALIBRATION**

Instruments used to perform the landfill surface emission testing consisted of the following:

- Trimble SiteFID Landfill Gas Monitor Portable Flame Ionization Detector (FID). This instrument measures methane in air over a range of 1 to 50,000 ppmv. The SiteFID meets the CARB requirements for combined instantaneous and integrated monitoring and was calibrated in accordance with United States Environmental Protection Agency (US EPA) Method 21 and manufacturers specifications.
- A portable wind data logger by Secure Digital is used to monitor and log wind speeds while performing emissions monitoring. Field observations and local weather station information is used to track weather conditions and rain events.

Instrument calibration logs and instantaneous weather information are shown in Appendix D and E.

## **SURFACE EMISSIONS MONITORING PROCEDURES**

Instantaneous and integrated SEM was conducted in accordance with NSPS and LMR requirements. Monitoring was performed with the FID inlet held within 2 inches of the landfill surface while a technician walked a grid in parallel paths not more than 25-feet apart over the surface of the landfill unless site safety conditions or prior monitoring results allowed 100-foot pathways. Cracks, holes and all cover penetrations in the surface were also tested. Instantaneous surface emissions readings were monitored continuously and recorded every 5 seconds. Any areas in exceedance of the 200 or 500 ppmv standards (reporting and compliance levels, respectively) were GPS tagged, any locations exceeding the 500 ppmv standard were also stake-marked for on-site personnel to perform remediation or repairs.

The integrated average is based on the readings stored on the instrument which are recorded every 5 seconds. The readings are then downloaded, and the averages are calculated for each grid using software provided by the instrument manufacturer. The readings are not provided in the report due to the volume of data but can be furnished upon request.

Recorded wind speed results are shown in Appendix F. Wind speed 15-minute averages were observed to remain below the approved Alternative Compliance Option (ACO) 10 miles per hour (based on 60 second intervals), and no instantaneous speeds exceeded 20 miles per hour during the testing. Monitoring was terminated in any instance average wind speeds exceeded 10 miles per hour until observed below the limit. No rainfall occurred during or within 24 hours of monitoring, in accordance

with the alternative compliance condition. Therefore, site meteorological conditions were within the approved alternatives of the LMR requirements on the above-mentioned dates.

## TESTING RESULTS

During this SEM event Tetra Tech performed the monitoring on 25-foot pathways in accordance with the rules as required under the LMR and NSPS. The intent of the monitoring was to identify any specific locations or areas of the landfill surface with organic compound concentrations exceeding the NSPS and/or LMR threshold limit values of 500 ppmv measured as methane for instantaneous monitoring, or an average methane concentration of 25 ppmv for the integrated monitoring.

During the initial monitoring events on July 28, 29, 30, and 31, 2020, there were zero (0) exceedances of the LMR integrated threshold limit of 25 ppmv as measured as methane above background and six (6) locations that exceeded the NSPS (Grids) and LMR (Grids and Penetrations) instantaneous level of 500 ppmv. System adjustments and repair work (repair of boreholes, vacuum increases to nearby extraction wells and re-compaction of soil) was performed by site personnel and subsequent 10-day re-monitoring on August 6, 2020 indicated that all the six (6) areas that were initially in exceedance had returned to compliance.

Follow-up monitoring was conducted at the one-month interval as required on August 18, 2020. All areas of initial exceedance were re-monitored during this time following additional abatement activities by site personnel. After the one-month confirmation re-monitoring event, zero (0) instantaneous locations remained above the NSPS and LMR thresholds of compliance. Based on these results no further testing is required until the fourth quarter of 2020. Results of the monitoring are shown in Appendix B and C (Tables 1, 2, and 3). Calibration logs for the monitoring equipment are provided in Appendix D.

Furthermore, as required by the NSPS for surface emissions, the landfill perimeter was walked and tested. Results of this testing indicated that no exceedances of the 500 ppmv limit were observed, therefore the site perimeter was in compliance with the requirements of the rule.

As mentioned above:

- Full grids 26, 30, 31, 35, 36, 41, 42, 49, 52, 59, 61, 66, 67, 74, 75, 78, 83, 84, 94, 102, 103, 113, 123, 124, 134, 135, 136, 137, 147, 148, 149, 150, 160, 161, 162, 163, 164, 174, 175, 176, 177, 187, 188, 189, 190, 191, 192, 193, 201, 202, 203, 211, 212, 213, 214, 215, 223, 224, 225, 227, 228, 229, 230, 231, 232, and 233 were not monitored due to active construction, heavy equipment traffic, or steep slopes (steeper than 33.5% or 18 degrees) which resulted in unsafe conditions. (see Appendix A).
- Partial grids 1, 2, 4, 13, 14, 17, 27, 34, 40, 48, 50, 51, 58, 60, 62, 68, 70, 76, 77, 79, 85, 86, 87, 93, 95, 96, 97, 104, 105, 112, 114, 125, 138, 151, 159, 173, 185, 186, 194, 195, 200, 204, 205, 210, 216, 222, and 226 were not monitored due to active construction, heavy equipment traffic, or steep slopes (steeper than 33.5% or 18 degrees) which resulted in unsafe conditions. (see Appendix A).

As these areas were deemed unsafe by Tetra Tech personnel for entry due to active filling operations, construction, and other dangerous or unsafe conditions, which could cause a potential for injury of monitoring personnel (Appendix A).

Areas consisting of native soil (no waste in place) are also exempt from monitoring, in accordance with the LMR.

Any wells located in grids noted as exempt from monitoring due to health and safety concerns that remained accessible were monitored on an as-needed basis.

## **PROJECT SCHEDULE**

Following the initial events performed on July 28, 29, 30, and 31, 2020, subsequent re-monitoring was scheduled within 10 days. The first 10-day re-monitoring event was performed on August 6, 2020, and one-month confirmation testing of abated instantaneous readings was performed on August 18, 2020.

In accordance with the approved Scope of Work, Tetra Tech is scheduled to perform the fourth quarter NSPS and LMR monitoring event by December 2020 in all areas deemed safe for entry.

## **STANDARD PROVISIONS**

This report addresses conditions of the subject site during the testing dates only. Accordingly, we assume no responsibility for any changes that may occur subsequent to testing which could affect the surface emissions at the subject site or adjacent properties.

If you have any questions regarding this report, please contact Justin Ruhle at (925) 323-6866.

Thank you,



Justin Ruhle – O&M West Area Manager

This report contains the following Appendices:

**Appendix A:** Surface Grid Map

**Appendix B:** Instantaneous Monitoring Results

**Appendix C:** Integrated Monitoring Results

**Appendix D:** Calibration Logs

**Appendix E:** Weather Data

**Appendix F:** Wind Speed Data

# APPENDIX A

## Surface Grid Map

# Vasco Road Landfill - 3Q2020 SEM

Annotated Map

**Legend**

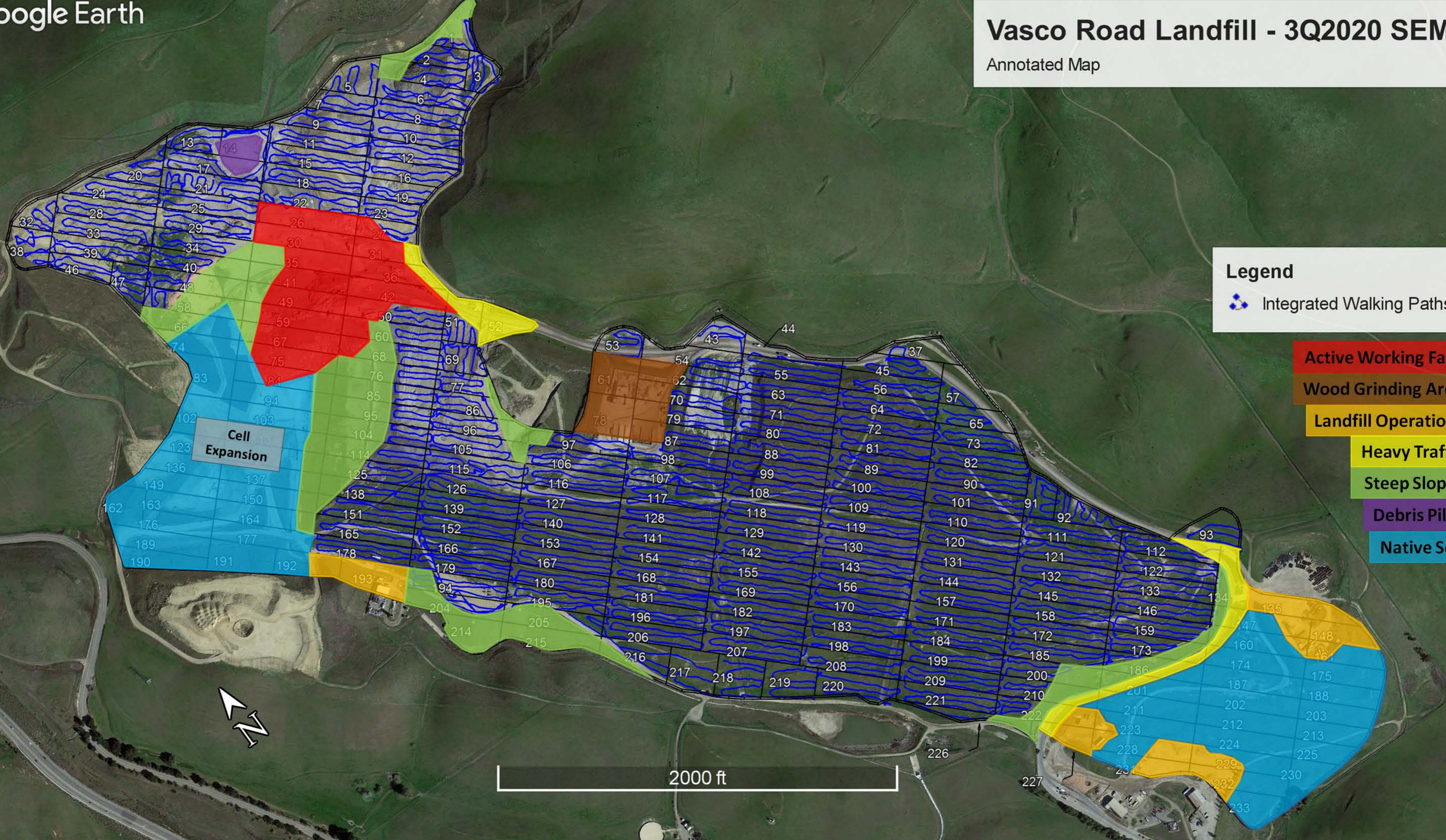
-  Integrated Walking Paths

-  Active Working Face
-  Wood Grinding Area
-  Landfill Operations
-  Heavy Traffic
-  Steep Slopes
-  Debris Piles
-  Native Soil

Cell Expansion



2000 ft





# **APPENDIX B**

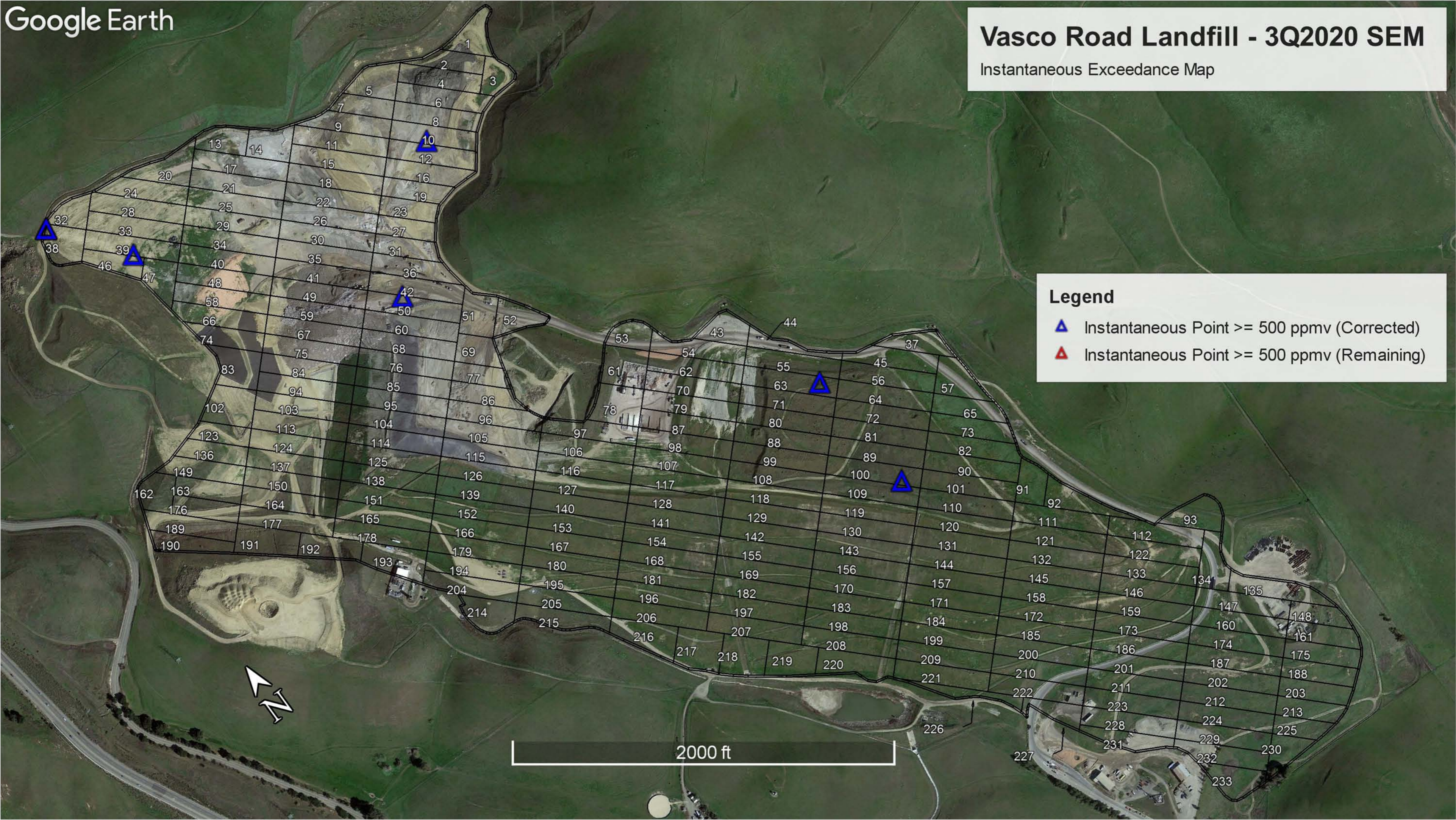
## **Instantaneous Monitoring Results**

# Vasco Road Landfill - 3Q2020 SEM

Instantaneous Exceedance Map

## Legend

-  Instantaneous Point  $\geq$  500 ppmv (Corrected)
-  Instantaneous Point  $\geq$  500 ppmv (Remaining)



**Table 1**  
SUMMARY OF INSTANTANEOUS METHANE CONCENTRATIONS BETWEEN 200-499 PPMV  
3Q2020 Vasco Road Landfill

FILE NAME	DATE	WELL ID.	LATITUDE WGS84	LONGITUDE WGS84	METHANE CONCENTRATION (ppmv)
MONITOR_Vascowells_GRID_EW116_2020_Q3_Initial.csv	7/28/2020	EW116	37.760033	-121.723198	302.3
MONITOR_Vascowells_GRID_EW122A_2020_Q3_Initial.csv	7/28/2020	EW122A	37.759485	-121.726252	337.1



**Table 2**  
**SUMMARY OF INSTANTANEOUS METHANE CONCENTRATIONS  $\geq$ 500 PPMV**  
**INCLUDING REMONITORING RESULTS**  
**3Q2020 Vasco Road Landfill**

FILE NAME	DATE	GRID NO. / WELL ID.	LATITUDE WGS84	LONGITUDE WGS84	METHANE CONCENTRATION (ppmv)
MONITOR_Vascowells_GRID_12LR01_2020_Q3_Initial.csv	7/28/2020	12LR01	37.761895	-121.730405	1571.4
MONITOR_Vascowells_GRID_12LR01_2020_Q3_10Day_1.csv	8/6/2020	12LR01	37.761902	-121.730380	164.7
MONITOR_Vascowells_GRID_12LR01_2020_Q3_Month.csv	8/18/2020	12LR01	37.761905	-121.730390	0.0
MONITOR_Vascowells_GRID_EW160_2020_Q3_Initial.csv	7/28/2020	EW160	37.760863	-121.729402	883.6
MONITOR_Vascowells_GRID_EW160_2020_Q3_10Day_1.csv	8/6/2020	EW160	37.760877	-121.729372	1.7
MONITOR_Vascowells_GRID_EW160_2020_Q3_Month.csv	8/18/2020	EW160	37.760883	-121.729345	0.0
MONITOR_Vascowells_GRID_EW68A_2020_Q3_Initial.csv	7/28/2020	EW68A	37.751788	-121.720563	715.7
MONITOR_Vascowells_GRID_EW68A_2020_Q3_10Day_1.csv	8/6/2020	EW68A	37.751808	-121.720560	0.0
MONITOR_Vascowells_GRID_EW68A_2020_Q3_Month.csv	8/18/2020	EW68A	37.751822	-121.720560	0.0
MONITOR_Vascowells_GRID_EW83_2020_Q3_Initial.csv	7/28/2020	EW83	37.753615	-121.720718	692.2
MONITOR_Vascowells_GRID_EW83_2020_Q3_10Day_1.csv	8/6/2020	EW83	37.753640	-121.720730	18.8
MONITOR_Vascowells_GRID_EW83_2020_Q3_Month.csv	8/18/2020	EW83	37.753598	-121.720745	0.0
MONITOR_Vascowells_GRID_EW92_2020_Q3_Initial.csv	7/28/2020	EW92	37.758117	-121.725908	1721.4
MONITOR_Vascowells_GRID_EW92_2020_Q3_10Day_1.csv	8/6/2020	EW92	37.758142	-121.725865	48.7
MONITOR_Vascowells_GRID_EW92_2020_Q3_Month.csv	8/18/2020	EW92	37.758138	-121.725880	17.3
MONITOR_Vascowells_GRID_RW004_2020_Q3_Initial.csv	7/28/2020	RW004	37.759713	-121.723902	719.1
MONITOR_Vascowells_GRID_RW004_2020_Q3_10Day_1.csv	8/6/2020	RW004	37.759723	-121.723925	0.0
MONITOR_Vascowells_GRID_RW004_2020_Q3_Month.csv	8/18/2020	RW004	37.759697	-121.723897	124.3



# APPENDIX C

## Integrated Monitoring Results

# Vasco Road Landfill - 3Q2020 SEM

Integrated Exceedance Map

**Legend**

-  Integrated Path < 25 ppmv
-  Integrated Path > 25 ppmv (Remaining)



**Table 3**  
**SUMMARY OF INTEGRATED METHANE CONCENTRATIONS**  
**INCLUDING REMONITORING RESULTS**  
**3Q2020 Vasco Road Landfill**

FILE NAME	DATE	GRID NO.	INTEGRATED METHANE CONCENTRATION (ppmv)
MONITOR_Vasco_GRID_1_2020_Q3_Initial.csv	7/31/2020	1	0.3
MONITOR_Vasco_GRID_2_2020_Q3_Initial.csv	7/31/2020	2	0.9
MONITOR_Vasco_GRID_3_2020_Q3_Initial.csv	7/31/2020	3	4.1
MONITOR_Vasco_GRID_4_2020_Q3_Initial.csv	7/31/2020	4	2.0
MONITOR_Vasco_GRID_5_2020_Q3_Initial.csv	7/31/2020	5	0.2
MONITOR_Vasco_GRID_6_2020_Q3_Initial.csv	7/31/2020	6	2.1
MONITOR_Vasco_GRID_7_2020_Q3_Initial.csv	7/31/2020	7	0.1
MONITOR_Vasco_GRID_8_2020_Q3_Initial.csv	7/31/2020	8	4.2
MONITOR_Vasco_GRID_9_2020_Q3_Initial.csv	7/31/2020	9	0.1
MONITOR_Vasco_GRID_10_2020_Q3_Initial.csv	7/31/2020	10	2.3
MONITOR_Vasco_GRID_11_2020_Q3_Initial.csv	7/31/2020	11	0.1
MONITOR_Vasco_GRID_12_2020_Q3_Initial.csv	7/31/2020	12	2.2
MONITOR_Vasco_GRID_13_2020_Q3_Initial.csv	7/30/2020	13	6.2
MONITOR_Vasco_GRID_14_2020_Q3_Initial.csv	7/30/2020	14	0.1
MONITOR_Vasco_GRID_15_2020_Q3_Initial.csv	7/31/2020	15	0.1
MONITOR_Vasco_GRID_16_2020_Q3_Initial.csv	7/31/2020	16	9.3
MONITOR_Vasco_GRID_17_2020_Q3_Initial.csv	7/30/2020	17	0.1
MONITOR_Vasco_GRID_18_2020_Q3_Initial.csv	7/31/2020	18	0.8
MONITOR_Vasco_GRID_19_2020_Q3_Initial.csv	7/31/2020	19	0.8
MONITOR_Vasco_GRID_20_2020_Q3_Initial.csv	7/30/2020	20	0.2
MONITOR_Vasco_GRID_21_2020_Q3_Initial.csv	7/30/2020	21	0.2
MONITOR_Vasco_GRID_22_2020_Q3_Initial.csv	7/31/2020	22	0.1
MONITOR_Vasco_GRID_23_2020_Q3_Initial.csv	7/31/2020	23	4.5
MONITOR_Vasco_GRID_24_2020_Q3_Initial.csv	7/30/2020	24	0.0
MONITOR_Vasco_GRID_25_2020_Q3_Initial.csv	7/30/2020	25	0.2
MONITOR_Vasco_GRID_27_2020_Q3_Initial.csv	7/31/2020	27	3.1
MONITOR_Vasco_GRID_28_2020_Q3_Initial.csv	7/30/2020	28	0.0
MONITOR_Vasco_GRID_29_2020_Q3_Initial.csv	7/30/2020	29	0.0
MONITOR_Vasco_GRID_32_2020_Q3_Initial.csv	7/30/2020	32	0.1
MONITOR_Vasco_GRID_33_2020_Q3_Initial.csv	7/30/2020	33	0.0
MONITOR_Vasco_GRID_34_2020_Q3_Initial.csv	7/30/2020	34	0.3
MONITOR_Vasco_GRID_37_2020_Q3_Initial.csv	7/29/2020	37	0.0
MONITOR_Vasco_GRID_38_2020_Q3_Initial.csv	7/30/2020	38	4.7
MONITOR_Vasco_GRID_39_2020_Q3_Initial.csv	7/30/2020	39	0.1
MONITOR_Vasco_GRID_40_2020_Q3_Initial.csv	7/30/2020	40	0.4
MONITOR_Vasco_GRID_43_2020_Q3_Initial.csv	7/30/2020	43	0.0
MONITOR_Vasco_GRID_44_2020_Q3_Initial.csv	7/30/2020	44	0.0
MONITOR_Vasco_GRID_45_2020_Q3_Initial.csv	7/29/2020	45	0.1
MONITOR_Vasco_GRID_46_2020_Q3_Initial.csv	7/30/2020	46	2.5
MONITOR_Vasco_GRID_47_2020_Q3_Initial.csv	7/30/2020	47	0.3
MONITOR_Vasco_GRID_48_2020_Q3_Initial.csv	7/30/2020	48	0.1
MONITOR_Vasco_GRID_50_2020_Q3_Initial.csv	7/30/2020	50	0.4
MONITOR_Vasco_GRID_51_2020_Q3_Initial.csv	7/30/2020	51	0.2
MONITOR_Vasco_GRID_53_2020_Q3_Initial.csv	7/30/2020	53	0.0
MONITOR_Vasco_GRID_54_2020_Q3_Initial.csv	7/30/2020	54	0.1
MONITOR_Vasco_GRID_55_2020_Q3_Initial.csv	7/30/2020	55	0.1
MONITOR_Vasco_GRID_56_2020_Q3_Initial.csv	7/29/2020	56	0.1
MONITOR_Vasco_GRID_57_2020_Q3_Initial.csv	7/29/2020	57	0.0
MONITOR_Vasco_GRID_58_2020_Q3_Initial.csv	7/30/2020	58	0.2
MONITOR_Vasco_GRID_60_2020_Q3_Initial.csv	7/30/2020	60	1.6
MONITOR_Vasco_GRID_62_2020_Q3_Initial.csv	7/30/2020	62	0.0
MONITOR_Vasco_GRID_63_2020_Q3_Initial.csv	7/30/2020	63	0.0
MONITOR_Vasco_GRID_64_2020_Q3_Initial.csv	7/29/2020	64	0.1
MONITOR_Vasco_GRID_65_2020_Q3_Initial.csv	7/29/2020	65	0.1
MONITOR_Vasco_GRID_68_2020_Q3_Initial.csv	7/30/2020	68	0.1
MONITOR_Vasco_GRID_69_2020_Q3_Initial.csv	7/30/2020	69	0.2

**Table 3**  
**SUMMARY OF INTEGRATED METHANE CONCENTRATIONS**  
**INCLUDING REMONITORING RESULTS**  
**3Q2020 Vasco Road Landfill**

FILE NAME	DATE	GRID NO.	INTEGRATED METHANE CONCENTRATION (ppmv)
MONITOR_Vasco_GRID_70_2020_Q3_Initial.csv	7/30/2020	70	0.1
MONITOR_Vasco_GRID_71_2020_Q3_Initial.csv	7/30/2020	71	0.1
MONITOR_Vasco_GRID_72_2020_Q3_Initial.csv	7/29/2020	72	0.1
MONITOR_Vasco_GRID_73_2020_Q3_Initial.csv	7/29/2020	73	0.2
MONITOR_Vasco_GRID_76_2020_Q3_Initial.csv	7/30/2020	76	0.4
MONITOR_Vasco_GRID_77_2020_Q3_Initial.csv	7/30/2020	77	0.1
MONITOR_Vasco_GRID_79_2020_Q3_Initial.csv	7/30/2020	79	0.2
MONITOR_Vasco_GRID_80_2020_Q3_Initial.csv	7/30/2020	80	0.1
MONITOR_Vasco_GRID_81_2020_Q3_Initial.csv	7/29/2020	81	0.1
MONITOR_Vasco_GRID_82_2020_Q3_Initial.csv	7/29/2020	82	0.2
MONITOR_Vasco_GRID_85_2020_Q3_Initial.csv	7/30/2020	85	1.0
MONITOR_Vasco_GRID_86_2020_Q3_Initial.csv	7/30/2020	86	0.3
MONITOR_Vasco_GRID_87_2020_Q3_Initial.csv	7/30/2020	87	0.2
MONITOR_Vasco_GRID_88_2020_Q3_Initial.csv	7/30/2020	88	0.0
MONITOR_Vasco_GRID_89_2020_Q3_Initial.csv	7/29/2020	89	0.1
MONITOR_Vasco_GRID_90_2020_Q3_Initial.csv	7/29/2020	90	0.2
MONITOR_Vasco_GRID_91_2020_Q3_Initial.csv	7/29/2020	91	0.1
MONITOR_Vasco_GRID_92_2020_Q3_Initial.csv	7/29/2020	92	0.7
MONITOR_Vasco_GRID_93_2020_Q3_Initial.csv	7/29/2020	93	0.0
MONITOR_Vasco_GRID_95_2020_Q3_Initial.csv	7/30/2020	95	0.4
MONITOR_Vasco_GRID_96_2020_Q3_Initial.csv	7/30/2020	96	4.0
MONITOR_Vasco_GRID_97_2020_Q3_Initial.csv	7/30/2020	97	0.1
MONITOR_Vasco_GRID_98_2020_Q3_Initial.csv	7/30/2020	98	0.1
MONITOR_Vasco_GRID_99_2020_Q3_Initial.csv	7/30/2020	99	0.0
MONITOR_Vasco_GRID_100_2020_Q3_Initial.csv	7/29/2020	100	0.1
MONITOR_Vasco_GRID_101_2020_Q3_Initial.csv	7/29/2020	101	0.7
MONITOR_Vasco_GRID_104_2020_Q3_Initial.csv	7/30/2020	104	3.7
MONITOR_Vasco_GRID_105_2020_Q3_Initial.csv	7/30/2020	105	6.5
MONITOR_Vasco_GRID_106_2020_Q3_Initial.csv	7/30/2020	106	0.1
MONITOR_Vasco_GRID_107_2020_Q3_Initial.csv	7/30/2020	107	0.1
MONITOR_Vasco_GRID_108_2020_Q3_Initial.csv	7/30/2020	108	0.0
MONITOR_Vasco_GRID_109_2020_Q3_Initial.csv	7/29/2020	109	0.1
MONITOR_Vasco_GRID_110_2020_Q3_Initial.csv	7/29/2020	110	0.0
MONITOR_Vasco_GRID_111_2020_Q3_Initial.csv	7/29/2020	111	1.2
MONITOR_Vasco_GRID_112_2020_Q3_Initial.csv	7/29/2020	112	0.8
MONITOR_Vasco_GRID_114_2020_Q3_Initial.csv	7/30/2020	114	7.1
MONITOR_Vasco_GRID_115_2020_Q3_Initial.csv	7/30/2020	115	4.2
MONITOR_Vasco_GRID_116_2020_Q3_Initial.csv	7/30/2020	116	0.1
MONITOR_Vasco_GRID_117_2020_Q3_Initial.csv	7/30/2020	117	0.1
MONITOR_Vasco_GRID_118_2020_Q3_Initial.csv	7/30/2020	118	0.0
MONITOR_Vasco_GRID_119_2020_Q3_Initial.csv	7/29/2020	119	0.1
MONITOR_Vasco_GRID_120_2020_Q3_Initial.csv	7/29/2020	120	0.0
MONITOR_Vasco_GRID_121_2020_Q3_Initial.csv	7/29/2020	121	1.0
MONITOR_Vasco_GRID_122_2020_Q3_Initial.csv	7/29/2020	122	2.1
MONITOR_Vasco_GRID_125_2020_Q3_Initial.csv	7/30/2020	125	2.3
MONITOR_Vasco_GRID_126_2020_Q3_Initial.csv	7/30/2020	126	0.7
MONITOR_Vasco_GRID_127_2020_Q3_Initial.csv	7/30/2020	127	0.1
MONITOR_Vasco_GRID_128_2020_Q3_Initial.csv	7/30/2020	128	0.1
MONITOR_Vasco_GRID_129_2020_Q3_Initial.csv	7/30/2020	129	0.0
MONITOR_Vasco_GRID_130_2020_Q3_Initial.csv	7/29/2020	130	0.0
MONITOR_Vasco_GRID_131_2020_Q3_Initial.csv	7/29/2020	131	0.0
MONITOR_Vasco_GRID_132_2020_Q3_Initial.csv	7/29/2020	132	0.1
MONITOR_Vasco_GRID_133_2020_Q3_Initial.csv	7/29/2020	133	0.2
MONITOR_Vasco_GRID_138_2020_Q3_Initial.csv	7/30/2020	138	2.5
MONITOR_Vasco_GRID_139_2020_Q3_Initial.csv	7/30/2020	139	0.1
MONITOR_Vasco_GRID_140_2020_Q3_Initial.csv	7/30/2020	140	0.0

**Table 3**  
**SUMMARY OF INTEGRATED METHANE CONCENTRATIONS**  
**INCLUDING REMONITORING RESULTS**  
**3Q2020 Vasco Road Landfill**

FILE NAME	DATE	GRID NO.	INTEGRATED METHANE CONCENTRATION (ppmv)
MONITOR_Vasco_GRID_141_2020_Q3_Initial.csv	7/30/2020	141	0.0
MONITOR_Vasco_GRID_142_2020_Q3_Initial.csv	7/30/2020	142	0.0
MONITOR_Vasco_GRID_143_2020_Q3_Initial.csv	7/29/2020	143	0.1
MONITOR_Vasco_GRID_144_2020_Q3_Initial.csv	7/29/2020	144	0.0
MONITOR_Vasco_GRID_145_2020_Q3_Initial.csv	7/29/2020	145	0.1
MONITOR_Vasco_GRID_146_2020_Q3_Initial.csv	7/29/2020	146	0.1
MONITOR_Vasco_GRID_151_2020_Q3_Initial.csv	7/30/2020	151	0.3
MONITOR_Vasco_GRID_152_2020_Q3_Initial.csv	7/30/2020	152	0.1
MONITOR_Vasco_GRID_153_2020_Q3_Initial.csv	7/30/2020	153	0.0
MONITOR_Vasco_GRID_154_2020_Q3_Initial.csv	7/30/2020	154	0.0
MONITOR_Vasco_GRID_155_2020_Q3_Initial.csv	7/30/2020	155	0.0
MONITOR_Vasco_GRID_156_2020_Q3_Initial.csv	7/29/2020	156	0.0
MONITOR_Vasco_GRID_157_2020_Q3_Initial.csv	7/29/2020	157	0.1
MONITOR_Vasco_GRID_158_2020_Q3_Initial.csv	7/29/2020	158	0.1
MONITOR_Vasco_GRID_159_2020_Q3_Initial.csv	7/29/2020	159	0.0
MONITOR_Vasco_GRID_165_2020_Q3_Initial.csv	7/30/2020	165	0.3
MONITOR_Vasco_GRID_166_2020_Q3_Initial.csv	7/30/2020	166	0.0
MONITOR_Vasco_GRID_167_2020_Q3_Initial.csv	7/30/2020	167	0.0
MONITOR_Vasco_GRID_168_2020_Q3_Initial.csv	7/30/2020	168	0.0
MONITOR_Vasco_GRID_169_2020_Q3_Initial.csv	7/29/2020	169	0.0
MONITOR_Vasco_GRID_170_2020_Q3_Initial.csv	7/29/2020	170	0.1
MONITOR_Vasco_GRID_171_2020_Q3_Initial.csv	7/29/2020	171	0.0
MONITOR_Vasco_GRID_172_2020_Q3_Initial.csv	7/29/2020	172	0.1
MONITOR_Vasco_GRID_173_2020_Q3_Initial.csv	7/29/2020	173	0.1
MONITOR_Vasco_GRID_178_2020_Q3_Initial.csv	7/30/2020	178	0.2
MONITOR_Vasco_GRID_179_2020_Q3_Initial.csv	7/30/2020	179	0.1
MONITOR_Vasco_GRID_180_2020_Q3_Initial.csv	7/30/2020	180	0.2
MONITOR_Vasco_GRID_181_2020_Q3_Initial.csv	7/29/2020	181	0.1
MONITOR_Vasco_GRID_182_2020_Q3_Initial.csv	7/29/2020	182	0.0
MONITOR_Vasco_GRID_183_2020_Q3_Initial.csv	7/29/2020	183	0.1
MONITOR_Vasco_GRID_184_2020_Q3_Initial.csv	7/29/2020	184	0.0
MONITOR_Vasco_GRID_185_2020_Q3_Initial.csv	7/29/2020	185	0.1
MONITOR_Vasco_GRID_186_2020_Q3_Initial.csv	7/29/2020	186	0.0
MONITOR_Vasco_GRID_194_2020_Q3_Initial.csv	7/30/2020	194	0.1
MONITOR_Vasco_GRID_195_2020_Q3_Initial.csv	7/30/2020	195	0.1
MONITOR_Vasco_GRID_196_2020_Q3_Initial.csv	7/29/2020	196	0.1
MONITOR_Vasco_GRID_197_2020_Q3_Initial.csv	7/29/2020	197	0.0
MONITOR_Vasco_GRID_198_2020_Q3_Initial.csv	7/29/2020	198	0.0
MONITOR_Vasco_GRID_199_2020_Q3_Initial.csv	7/29/2020	199	0.0
MONITOR_Vasco_GRID_200_2020_Q3_Initial.csv	7/29/2020	200	0.1
MONITOR_Vasco_GRID_204_2020_Q3_Initial.csv	7/30/2020	204	0.1
MONITOR_Vasco_GRID_205_2020_Q3_Initial.csv	7/29/2020	205	0.1
MONITOR_Vasco_GRID_206_2020_Q3_Initial.csv	7/29/2020	206	0.1
MONITOR_Vasco_GRID_207_2020_Q3_Initial.csv	7/29/2020	207	0.0
MONITOR_Vasco_GRID_208_2020_Q3_Initial.csv	7/29/2020	208	0.1
MONITOR_Vasco_GRID_209_2020_Q3_Initial.csv	7/29/2020	209	0.0
MONITOR_Vasco_GRID_210_2020_Q3_Initial.csv	7/29/2020	210	0.2
MONITOR_Vasco_GRID_216_2020_Q3_Initial.csv	7/29/2020	216	0.1
MONITOR_Vasco_GRID_217_2020_Q3_Initial.csv	7/29/2020	217	0.0
MONITOR_Vasco_GRID_218_2020_Q3_Initial.csv	7/29/2020	218	0.0
MONITOR_Vasco_GRID_219_2020_Q3_Initial.csv	7/29/2020	219	0.0
MONITOR_Vasco_GRID_220_2020_Q3_Initial.csv	7/29/2020	220	0.1
MONITOR_Vasco_GRID_221_2020_Q3_Initial.csv	7/29/2020	221	0.0
MONITOR_Vasco_GRID_222_2020_Q3_Initial.csv	7/29/2020	222	0.1
MONITOR_Vasco_GRID_226_2020_Q3_Initial.csv	7/29/2020	226	0.1

# APPENDIX D

## Calibration Logs

<u>MONITOR TYPE</u>	<u>OPERATOR NAME</u>	<u>FID ID</u>	<u>FILE SAVE TIME</u>	<u>AVG PRECISION (%)</u>	<u>AVG RESPONSE TIME (SECONDS)</u>					<u>FID ID</u>
VERIFICATION SUMMARY	Field Solutions, Inc.	88680FA6E68F	7/28/2020 7:42	-0.9	5.7					
<u>MONITOR TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>MEASURED CONCENTRATION (ppmv)</u>	<u>DIFFERENCE (ppmv)</u>	<u>DIFFERENCE (%)</u>	<u>ZERO AIR PPM</u>	<u>TIMESTAMP</u>	<u>FID ID</u>	
PRECISION MEASUREMENT		CH4 (Methane)	500	495.2	-4.8	-1	0	7/28/2020 7:40	88680FA6E68F	
PRECISION MEASUREMENT		CH4 (Methane)	500	495.9	-4.1	-0.8	0	7/28/2020 7:40	88680FA6E68F	
PRECISION MEASUREMENT		CH4 (Methane)	500	495.1	-4.9	-1	0	7/28/2020 7:41	88680FA6E68F	
<u>MONITOR TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>TARGET CONCENTRATION (ppmv)</u>	<u>INITIAL CONCENTRATION (ppmv)</u>	<u>RESPONSE TIME (seconds)</u>	<u>TIMESTAMP</u>	<u>FID ID</u>		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.7	0	6	7/28/2020 7:41	88680FA6E68F		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.7	0	5	7/28/2020 7:41	88680FA6E68F		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.7	0	6	7/28/2020 7:42	88680FA6E68F		
<u>MONITOR TYPE</u>	<u>OPERATOR NAME</u>	<u>FID ID</u>	<u>FILE SAVE TIME</u>	<u>AVG PRECISION (%)</u>	<u>AVG RESPONSE TIME (SECONDS)</u>					<u>FID ID</u>
VERIFICATION SUMMARY	Field Solutions, Inc.	000780DABAC4	7/28/2020 7:47	-0.4	4.7					
<u>MONITOR TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>MEASURED CONCENTRATION (ppmv)</u>	<u>DIFFERENCE (ppmv)</u>	<u>DIFFERENCE (%)</u>	<u>ZERO AIR PPM</u>	<u>TIMESTAMP</u>	<u>FID ID</u>	
PRECISION MEASUREMENT		CH4 (Methane)	500	498	-2	-0.4	0	7/28/2020 7:45	000780DABAC4	
PRECISION MEASUREMENT		CH4 (Methane)	500	498	-2	-0.4	0	7/28/2020 7:45	000780DABAC4	
PRECISION MEASUREMENT		CH4 (Methane)	500	497.6	-2.4	-0.5	0	7/28/2020 7:46	000780DABAC4	
<u>MONITOR TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>TARGET CONCENTRATION (ppmv)</u>	<u>INITIAL CONCENTRATION (ppmv)</u>	<u>RESPONSE TIME (seconds)</u>	<u>TIMESTAMP</u>	<u>FID ID</u>		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	473	0	5	7/28/2020 7:47	000780DABAC4		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	473	0	4	7/28/2020 7:47	000780DABAC4		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	473	0	5	7/28/2020 7:47	000780DABAC4		
<u>MONITOR TYPE</u>	<u>OPERATOR NAME</u>	<u>FID ID</u>	<u>FILE SAVE TIME</u>	<u>AVG PRECISION (%)</u>	<u>AVG RESPONSE TIME (SECONDS)</u>					<u>FID ID</u>
VERIFICATION SUMMARY	Field Solutions, Inc.	88680F62C147	7/28/2020 7:48	-0.2	5					
<u>MONITOR TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>MEASURED CONCENTRATION (ppmv)</u>	<u>DIFFERENCE (ppmv)</u>	<u>DIFFERENCE (%)</u>	<u>ZERO AIR PPM</u>	<u>TIMESTAMP</u>	<u>FID ID</u>	
PRECISION MEASUREMENT		CH4 (Methane)	500	498.6	-1.4	-0.3	0	7/28/2020 7:46	88680F62C147	
PRECISION MEASUREMENT		CH4 (Methane)	500	499	-1	-0.2	0	7/28/2020 7:46	88680F62C147	
PRECISION MEASUREMENT		CH4 (Methane)	500	498.8	-1.2	-0.2	0	7/28/2020 7:47	88680F62C147	
<u>MONITOR TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>TARGET CONCENTRATION (ppmv)</u>	<u>INITIAL CONCENTRATION (ppmv)</u>	<u>RESPONSE TIME (seconds)</u>	<u>TIMESTAMP</u>	<u>FID ID</u>		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	473.9	0	5	7/28/2020 7:47	88680F62C147		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	473.9	0	5	7/28/2020 7:47	88680F62C147		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	473.9	0	5	7/28/2020 7:48	88680F62C147		
<u>MONITORING TYPE</u>	<u>OPERATOR NAME</u>	<u>INSTRUMENT ID</u>	<u>FILE SAVE TIME</u>	<u>AVG PRECISION (%)</u>	<u>AVG RESPONSE TIME (SECONDS)</u>					<u>INSTRUMENT ID</u>
VERIFICATION SUMMARY	Field Solutions, Inc.	88680FA6E68F	7/29/2020 7:39	-0.9	5.3					
<u>MONITORING TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>DETECTOR CONCENTRATION (ppmv)</u>	<u>DIFFERENCE (ppmv)</u>	<u>DIFFERENCE (%)</u>	<u>ZERO AIR PPM</u>	<u>TIMESTAMP</u>	<u>INSTRUMENT ID</u>	
PRECISION MEASUREMENT		CH4 (Methane)	500	493.7	-6.3	-1.3	0	7/29/2020 7:37	88680FA6E68F	
PRECISION MEASUREMENT		CH4 (Methane)	500	496.1	-3.9	-0.8	0	7/29/2020 7:37	88680FA6E68F	
PRECISION MEASUREMENT		CH4 (Methane)	500	496.1	-3.9	-0.8	0	7/29/2020 7:37	88680FA6E68F	
<u>MONITORING TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>TARGET CONCENTRATION (ppmv)</u>	<u>INITIAL CONCENTRATION (ppmv)</u>	<u>RESPONSE TIME (seconds)</u>	<u>TIMESTAMP</u>	<u>INSTRUMENT ID</u>		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.5	0	5	7/29/2020 7:38	88680FA6E68F		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.5	0	6	7/29/2020 7:38	88680FA6E68F		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.5	0	5	7/29/2020 7:39	88680FA6E68F		



<b>MONITORING TYPE</b>	<b>OPERATOR NAME</b>	<b>INSTRUMENT ID</b>	<b>FILE SAVE TIME</b>	<b>AVG PRECISION (%)</b>	<b>AVG RESPONSE TIME (SECONDS)</b>				
VERIFICATION SUMMARY	Field Solutions, Inc.	88680F62C147	7/29/2020 7:44	-0.6	5.3				
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>DETECTOR CONCENTRATION (ppmv)</b>	<b>DIFFERENCE (ppmv)</b>	<b>DIFFERENCE (%)</b>	<b>ZERO AIR PPM</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>
PRECISION MEASUREMENT		CH4 (Methane)	500	497.6	-2.4	-0.5	0	7/29/2020 7:42	88680F62C147
PRECISION MEASUREMENT		CH4 (Methane)	500	497	-3	-0.6	0	7/29/2020 7:42	88680F62C147
PRECISION MEASUREMENT		CH4 (Methane)	500	496.7	-3.3	-0.7	0	7/29/2020 7:43	88680F62C147
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>TARGET CONCENTRATION (ppmv)</b>	<b>INITIAL CONCENTRATION (ppmv)</b>	<b>RESPONSE TIME (seconds)</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.2	0	5	7/29/2020 7:43	88680F62C147	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.2	0	6	7/29/2020 7:43	88680F62C147	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.2	0	5	7/29/2020 7:44	88680F62C147	
<b>MONITORING TYPE</b>	<b>OPERATOR NAME</b>	<b>INSTRUMENT ID</b>	<b>FILE SAVE TIME</b>	<b>AVG PRECISION (%)</b>	<b>AVG RESPONSE TIME (SECONDS)</b>				
VERIFICATION SUMMARY	Field Solutions, Inc.	000780DABAC4	7/29/2020 7:56	-0.5	5.3				
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>DETECTOR CONCENTRATION (ppmv)</b>	<b>DIFFERENCE (ppmv)</b>	<b>DIFFERENCE (%)</b>	<b>ZERO AIR PPM</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>
PRECISION MEASUREMENT		CH4 (Methane)	500	497.6	-2.4	-0.5	0	7/29/2020 7:53	000780DABAC4
PRECISION MEASUREMENT		CH4 (Methane)	500	497.6	-2.4	-0.5	0	7/29/2020 7:53	000780DABAC4
PRECISION MEASUREMENT		CH4 (Methane)	500	497.6	-2.4	-0.5	0	7/29/2020 7:54	000780DABAC4
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>TARGET CONCENTRATION (ppmv)</b>	<b>INITIAL CONCENTRATION (ppmv)</b>	<b>RESPONSE TIME (seconds)</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.7	0	5	7/29/2020 7:54	000780DABAC4	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.7	0	5	7/29/2020 7:55	000780DABAC4	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.7	0	6	7/29/2020 7:55	000780DABAC4	
<b>MONITORING TYPE</b>	<b>OPERATOR NAME</b>	<b>INSTRUMENT ID</b>	<b>FILE SAVE TIME</b>	<b>AVG PRECISION (%)</b>	<b>AVG RESPONSE TIME (SECONDS)</b>				
VERIFICATION SUMMARY	Field Solutions, Inc.	88680FA6E68F	7/30/2020 7:41	-1	6				
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>DETECTOR CONCENTRATION (ppmv)</b>	<b>DIFFERENCE (ppmv)</b>	<b>DIFFERENCE (%)</b>	<b>ZERO AIR PPM</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>
PRECISION MEASUREMENT		CH4 (Methane)	500	495.8	-4.2	-0.8	0	7/30/2020 7:39	88680FA6E68F
PRECISION MEASUREMENT		CH4 (Methane)	500	494	-6	-1.2	0	7/30/2020 7:39	88680FA6E68F
PRECISION MEASUREMENT		CH4 (Methane)	500	495	-5	-1	0	7/30/2020 7:39	88680FA6E68F
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>TARGET CONCENTRATION (ppmv)</b>	<b>INITIAL CONCENTRATION (ppmv)</b>	<b>RESPONSE TIME (seconds)</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.2	0	5	7/30/2020 7:40	88680FA6E68F	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.2	0	6	7/30/2020 7:40	88680FA6E68F	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.2	0	7	7/30/2020 7:40	88680FA6E68F	
<b>MONITORING TYPE</b>	<b>OPERATOR NAME</b>	<b>INSTRUMENT ID</b>	<b>FILE SAVE TIME</b>	<b>AVG PRECISION (%)</b>	<b>AVG RESPONSE TIME (SECONDS)</b>				
VERIFICATION SUMMARY	Field Solutions, Inc.	88680F62C147	7/30/2020 7:46	-0.5	5				
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>DETECTOR CONCENTRATION (ppmv)</b>	<b>DIFFERENCE (ppmv)</b>	<b>DIFFERENCE (%)</b>	<b>ZERO AIR PPM</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>
PRECISION MEASUREMENT		CH4 (Methane)	500	497.6	-2.4	-0.5	0	7/30/2020 7:44	88680F62C147
PRECISION MEASUREMENT		CH4 (Methane)	500	497.9	-2.1	-0.4	0	7/30/2020 7:44	88680F62C147
PRECISION MEASUREMENT		CH4 (Methane)	500	497.1	-2.9	-0.6	0	7/30/2020 7:45	88680F62C147
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>TARGET CONCENTRATION (ppmv)</b>	<b>INITIAL CONCENTRATION (ppmv)</b>	<b>RESPONSE TIME (seconds)</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.6	0	5	7/30/2020 7:45	88680F62C147	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.6	0	5	7/30/2020 7:45	88680F62C147	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.6	0	5	7/30/2020 7:46	88680F62C147	

<u>MONITORING TYPE</u>	<u>OPERATOR NAME</u>	<u>INSTRUMENT ID</u>	<u>FILE SAVE TIME</u>	<u>AVG PRECISION (%)</u>	<u>AVG RESPONSE TIME (SECONDS)</u>				
VERIFICATION SUMMARY	Field Solutions, Inc.	88680FA6E68F	7/31/2020 8:35	-0.9	5				
<u>MONITORING TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>DETECTOR CONCENTRATION (ppmv)</u>	<u>DIFFERENCE (ppmv)</u>	<u>DIFFERENCE (%)</u>	<u>ZERO AIR PPM</u>	<u>TIMESTAMP</u>	<u>INSTRUMENT ID</u>
PRECISION MEASUREMENT		CH4 (Methane)	500	490.7	-9.3	-1.9	0	7/31/2020 8:33	88680FA6E68F
PRECISION MEASUREMENT		CH4 (Methane)	500	498.5	-1.5	-0.3	0	7/31/2020 8:33	88680FA6E68F
PRECISION MEASUREMENT		CH4 (Methane)	500	497.7	-2.3	-0.5	0	7/31/2020 8:34	88680FA6E68F
<u>MONITORING TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>TARGET CONCENTRATION (ppmv)</u>	<u>INITIAL CONCENTRATION (ppmv)</u>	<u>RESPONSE TIME (seconds)</u>	<u>TIMESTAMP</u>	<u>INSTRUMENT ID</u>	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.8	0	5	7/31/2020 8:34	88680FA6E68F	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.8	0	5	7/31/2020 8:34	88680FA6E68F	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.8	0	5	7/31/2020 8:35	88680FA6E68F	
<u>MONITORING TYPE</u>	<u>OPERATOR NAME</u>	<u>INSTRUMENT ID</u>	<u>FILE SAVE TIME</u>	<u>AVG PRECISION (%)</u>	<u>AVG RESPONSE TIME (SECONDS)</u>				
VERIFICATION SUMMARY	Field Solutions, Inc.	000780DABAC4	8/6/2020 8:28	-0.8	5.7				
<u>MONITORING TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>DETECTOR CONCENTRATION (ppmv)</u>	<u>DIFFERENCE (ppmv)</u>	<u>DIFFERENCE (%)</u>	<u>ZERO AIR PPM</u>	<u>TIMESTAMP</u>	<u>INSTRUMENT ID</u>
PRECISION MEASUREMENT		CH4 (Methane)	500	496.7	-3.3	-0.7	0	8/6/2020 8:21	000780DABAC4
PRECISION MEASUREMENT		CH4 (Methane)	500	496.2	-3.8	-0.8	0	8/6/2020 8:22	000780DABAC4
PRECISION MEASUREMENT		CH4 (Methane)	500	495.4	-4.6	-0.9	0	8/6/2020 8:23	000780DABAC4
<u>MONITORING TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>TARGET CONCENTRATION (ppmv)</u>	<u>INITIAL CONCENTRATION (ppmv)</u>	<u>RESPONSE TIME (seconds)</u>	<u>TIMESTAMP</u>	<u>INSTRUMENT ID</u>	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	471.3	0	6	8/6/2020 8:24	000780DABAC4	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	471.3	0	6	8/6/2020 8:25	000780DABAC4	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	471.3	0	5	8/6/2020 8:25	000780DABAC4	
<u>MONITORING TYPE</u>	<u>OPERATOR NAME</u>	<u>INSTRUMENT ID</u>	<u>FILE SAVE TIME</u>	<u>AVG PRECISION (%)</u>	<u>AVG RESPONSE TIME (SECONDS)</u>				
VERIFICATION SUMMARY	Field Solutions, Inc.	88680FA6E68F	8/18/2020 8:21	-1.7	5				
<u>MONITORING TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>DETECTOR CONCENTRATION (ppmv)</u>	<u>DIFFERENCE (ppmv)</u>	<u>DIFFERENCE (%)</u>	<u>ZERO AIR PPM</u>	<u>TIMESTAMP</u>	<u>INSTRUMENT ID</u>
PRECISION MEASUREMENT		CH4 (Methane)	500	492.6	-7.4	-1.5	0	8/18/2020 8:19	88680FA6E68F
PRECISION MEASUREMENT		CH4 (Methane)	500	490.8	-9.2	-1.8	0	8/18/2020 8:19	88680FA6E68F
PRECISION MEASUREMENT		CH4 (Methane)	500	490.4	-9.6	-1.9	0	8/18/2020 8:20	88680FA6E68F
<u>MONITORING TYPE</u>	<u>CAL GAS SERIAL NUMBER</u>	<u>CAL GAS TYPE</u>	<u>CAL GAS CONCENTRATION (ppmv)</u>	<u>TARGET CONCENTRATION (ppmv)</u>	<u>INITIAL CONCENTRATION (ppmv)</u>	<u>RESPONSE TIME (seconds)</u>	<u>TIMESTAMP</u>	<u>INSTRUMENT ID</u>	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	466.7	0	5	8/18/2020 8:20	88680FA6E68F	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	466.7	0	5	8/18/2020 8:21	88680FA6E68F	
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	466.7	0	5	8/18/2020 8:21	88680FA6E68F	

# APPENDIX E

## Weather Data

Date/Time	Temperature (°F)	Average Wind Speed (mph)	Wind Direction	Sky Condition	Precipitation
7/28/2020 7:48	57	4	West	Clear	None
7/28/2020 8:09	58	5	South-West	Clear	None
7/28/2020 7:54	59	4	West	Clear	None
7/29/2020 7:46	57	3	South-West	Overcast	None
7/29/2020 8:02	59	5	West	Partly Cloudy	None
7/30/2020 8:03	59	5	South-West	Overcast	None
7/30/2020 7:53	59	3	West	Overcast	None
7/30/2020 8:00	59	5	West	Mostly Cloudy	None
7/31/2020 8:40	57	3	South-West	Clear	None
8/6/2020 8:39	62	5	West	Partly Cloudy	None
8/18/2020 8:26	77	4	South-West	Clear	None

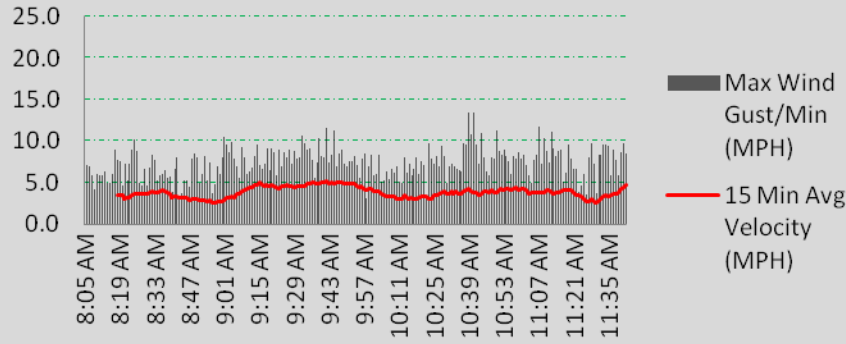
Field Solutions, Inc. portable wind meter

# APPENDIX F

## Wind Speed Data

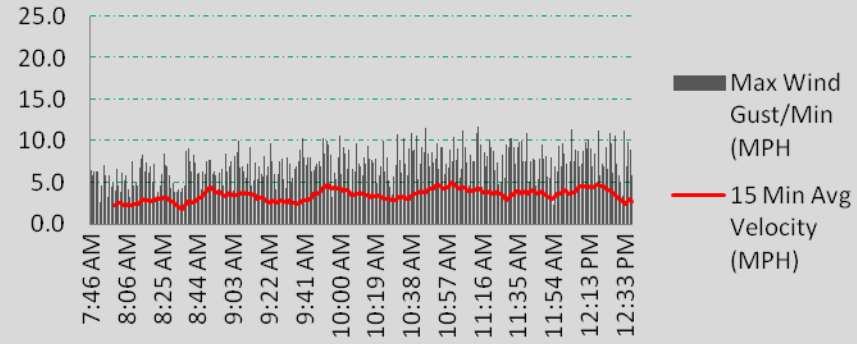
### Wind Log - Vasco Road Landfill

July 28, 2020



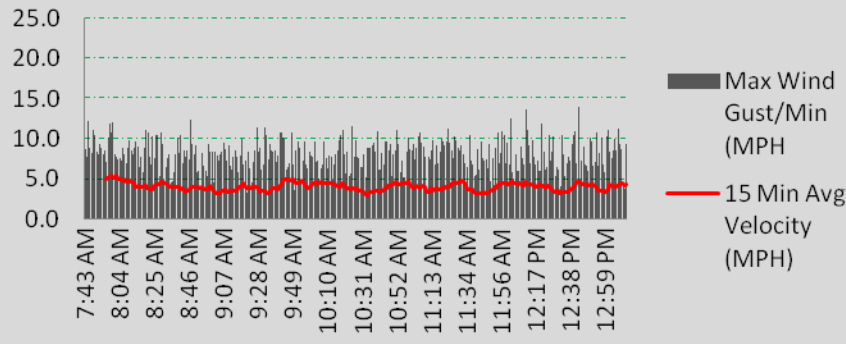
### Wind Log - Vasco Road Landfill

July 29, 2020



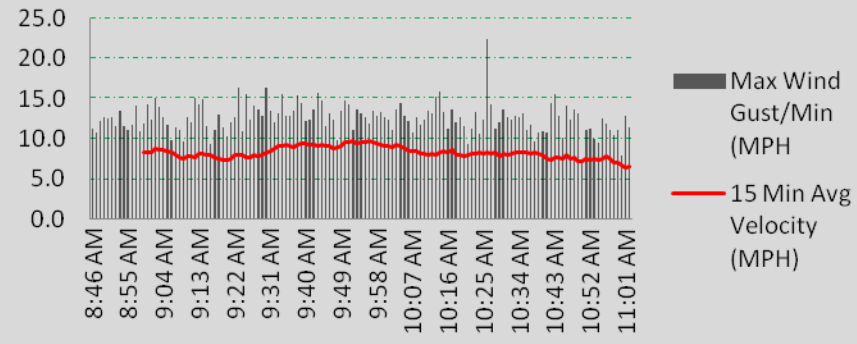
### Wind Log - Vasco Road Landfill

July 30, 2020



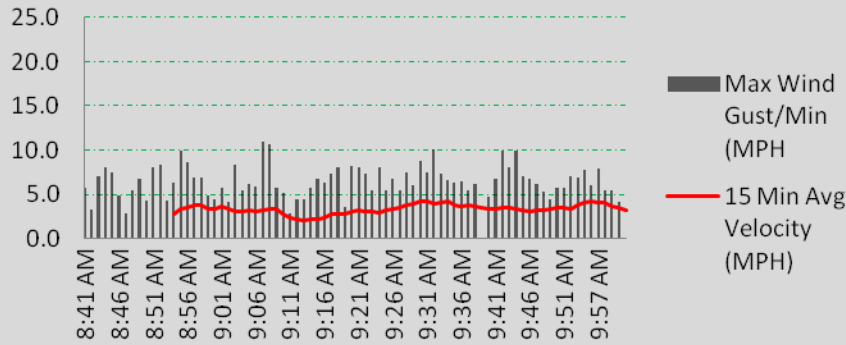
### Wind Log - Vasco Road Landfill

July 31, 2020



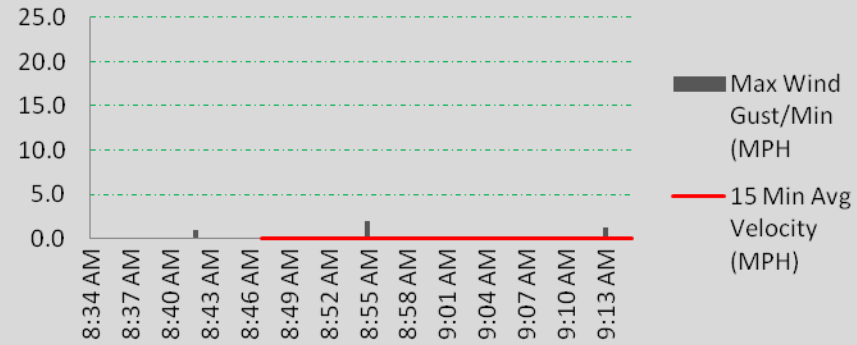
### Wind Log - Vasco Road Landfill

August 6, 2020



### Wind Log - Vasco Road Landfill

August 18, 2020



**VASCO ROAD  
Q-4-20 LFG FLARE COMPONENT LEAK MONITORING**

**INSTRUMENT**

**MAKE:** Thermo Scientific  
**MODEL:** TVA 2020  
**S/N:** 2020-17112952

**DATE OF SAMPLING:** 10/20/2020  
**TECHNICIAN:** Max Polkabila

LOCATION OF LEAK	CONCENTRATION (ppmv)	DATE OF DISCOVERY	TECHNICIAN	ACTION TAKEN TO REPAIR LEAK	DATE OF REPAIR	DATE OF ANY REQUIRED RE-MONITORING	RE-MONITORED CONCENTRATION (ppmv)
KOP	0	10/20/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Flanges Vac side	0	10/20/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Blowers	0	10/20/2020	Max Polkabila	NONE-REQUIRED	N/A	N/A	N/A
instruments	0	10/20/2020	Max Polkabila	NONE-REQUIRED	N/A	N/A	N/A
Flanges Pos side	0	10/20/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Flame Arrestor	17	10/20/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Panels	0	10/20/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Flare	0	10/20/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A
Fittings to Blowers	0	10/20/2020	Max Polkabila	NONE-REQUIRED	N/A	NA	N/A

Comments:

Note:

In the event that an exceedance is detected, please initiate corrective action and re-monitor the exceedance location within 7 days of the initial exceedance.  
 Leaks over 500 ppmv methane are exceedances at any component containing landfill gas pursuant to CARB Title 17 of California Code of Regulations Subchapter 10, Article 4, Subarticle 6, Section 95464(b)(1)(B).  
 Leaks over 1,000 ppmv methane are exceedances at any component containing landfill gas pursuant to BAAQMD Regulation 8-34-301.2.

Vasco Road Landfill, Livermore, California

Fourth QUARTER LFG COMPONENT LEAK MONITORING - WELLFIELD

SITE: VASCO ROAD  
 INSTRUMENT: IRWIN METHANE LEAK DETECTOR  
 MAKE: INFICON  
 MODEL: IRWIN SX  
 S/N: 92000673

DATE OF SAMPLING: 10/5/2020 - 10/6/2020  
 TECHNICIAN: Field Services, Inc.

LOCATION OF LEAK	LEAK CONCENTRATION (ppmv)	DATE OF DISCOVERY	DESCRIPTION OF EQUIPMENT	ACTION TAKEN TO REPAIR LEAK	DATE OF REPAIR	DATE OF ANY REQUIRED RE-MONITORING	RE-MONITORED CONCENTRATION (ppmv)
None							
Note:	In the event that an exceedance is detected, please initiate corrective action and re-monitor the exceedance location within 7 days of the initial exceedance. Leaks over 500 ppmv methane are exceedances at any component containing landfill gas pursuant to CARB Title 17 of California Code of Regulations Subchapter 10, Article 4, Subarticle 6, Section 95464(b)(1)(B). Leaks over 1,000 ppmv methane are exceedances at any component containing landfill gas pursuant to BAAQMD Regulation 8-34-301.2. N/A - Not Applicable LFG - Landfill Gas						





# Vasco Road Landfill

Quarterly Surface Emissions Monitoring Report – Fourth Quarter 2020





January 4, 2020

**Ms. Antonia Gunner**  
**Republic Services**  
Vasco Road Landfill  
4001 N Vasco Rd  
Livermore, CA 94551

Subject: Fourth Quarter 2020 Surface Emissions Monitoring Results for the Vasco Road Landfill, Livermore, CA

Dear Ms. Gunner:

This report provides results of the fourth quarter 2020 New Source Performance Standards (NSPS) and California Air Resources Board (CARB) Landfill Methane Rule (LMR) surface emissions monitoring (SEM) performed by Tetra Tech at the Vasco Road Landfill. All work was performed in accordance with Republic Standard Operating Procedures (SOP), NSPS and LMR requirements.

## **SUMMARY AND CONCLUSIONS**

As stipulated in the LMR, if uncorrectable exceedances within the 10-day limitation are detected or emissions are discovered during an inspection by Regulatory Agencies, the landfill must perform monitoring on a 25-foot pathway on a quarterly basis for active disposal sites. If four (4) consecutive quarters of monitoring are performed without any exceedances, as stipulated in the LMR, the landfill may increase the spacing to 100-foot pathways. Therefore, based on the previous monitoring events, in which exceedances were observed, the monitoring at the Vasco Road Landfill was performed on 25-foot pathways in accordance with the LMR.

As required by the LMR, the landfill was divided into 50,000 square foot or less (partial) areas. The Vasco Road Landfill surface area was, therefore, divided into two hundred and thirty-three (233) individual grids as shown in Appendix A.

The fourth quarter 2020 SEM testing results indicated zero (0) exceedances of the LMR integrated threshold limit of 25 parts per million by volume (ppmv) as measured as methane above background and six (6) locations that exceeded the NSPS (Grids) and LMR (Grids and Penetrations) instantaneous level of 500 ppmv during the initial monitoring event. System adjustments and repair work was performed by Tetra Tech and site personnel. Subsequent re-monitoring occurred within the required timelines from NSPS and LMR. Re-monitoring indicated there were zero (0) locations with remaining instantaneous exceedances. These results are discussed in a subsequent section of this report.

Additionally, during this event, some grids were not monitored as these areas were deemed unsafe by Tetra Tech and site personnel for entry due to active filling operations or soil management operations, which could cause a potential for injury of monitoring personnel as follows:

- Full grids 30, 31, 35, 36, 37, 41, 42, 49, 52, 53, 59, 61, 66, 67, 74, 75, 78, 83, 84, 94, 102, 103, 113, 123, 124, 134, 135, 136, 137, 147, 148, 149, 150, 160, 161, 162, 163, 164, 174, 175, 176, 177, 187, 188, 189, 190, 191, 192, 193, 201, 202, 203, 205, 211, 212, 213, 214, 215, 223, 224, 225, 227, 228, 229, 230, 231, 232, and 233 were not monitored due to active construction, heavy equipment traffic, or steep slopes (steeper than 33.5% or 18 degrees) which resulted in unsafe conditions. (see Appendix A).
- Partial grids 11, 13, 14, 15, 17, 18, 21, 22, 34, 40, 43, 44, 45, 48, 50, 51, 54, 57, 58, 60, 62, 65, 68, 70, 76, 79, 85, 87, 93, 95, 104, 112, 114, 125, 138, 151, 159, 173, 185, 186, 200, 204, 210, 216, 222, and 226 were not monitored due to active construction, heavy equipment traffic, or steep slopes (steeper than 33.5% or 18 degrees) which resulted in unsafe conditions. (see Appendix A).

Areas consisting of native soil (no waste in place) were also exempted from monitoring, in accordance with the LMR.

Any wells located in grids noted as exempt from monitoring due to health and safety concerns that remained accessible were monitored on an as-needed basis.

Excluded areas are provided on the field map in Appendix A.

Further, as required under the LMR, any location on the landfill that has an observed instantaneous methane concentration greater than or equal to 500 ppmv, must be stake-marked and Global Positioning System (GPS) located on a site figure. When concentrations greater than or equal to 500 ppmv are observed during monitoring events, they are reported to site personnel and included in the quarterly report for that event for inclusion into the annual report as required.

Locations with concentrations between 200 ppmv and 499 ppmv are for reporting purposes only and require no remediation, as they are not an exceedance. Thirteen (13) locations were found during the monitoring between the LMR instantaneous recording levels of 200 ppmv to 499 ppmv.

Finally, to help prevent potential future exceedances, Tetra Tech recommends that the landfill surface be routinely inspected, any observed surface erosion be routinely repaired, and flowrates to the destruction devices be maximized.

## **BACKGROUND**

The Vasco Road Landfill is an active organic refuse disposal site. By way of background, organic materials buried in a landfill decompose anaerobically (in the absence of oxygen) producing a combustible gas, which contains approximately 50 to 60 percent methane, 40 to 50 percent carbon dioxide, and trace amounts of various other gases, some of which are odorous. The Vasco Road Landfill property contains a Gas Collection and Control System (GCCS) to control the combustible gases generated in the landfill that may otherwise either vent vertically to the atmosphere or migrate horizontally through subsurface soil to locations on adjacent properties.

## **SURFACE EMISSIONS MONITORING**

Instantaneous and integrated SEM was performed over the surface of the subject site on October 5, 6, 7, 8, 13, and 30, 2020. The intent of the monitoring was to identify any specific locations or areas of the landfill surface with organic compound concentrations exceeding the NSPS and/or LMR threshold limit values of 500 ppmv measured as methane for instantaneous monitoring, or an average methane concentration of 25 ppmv for the integrated monitoring in the 50,000 square foot grids as required under the LMR. During this event Tetra Tech performed the monitoring on 25-foot pathways in all accessible areas, in accordance with the rules as required.

## **EMISSIONS TESTING INSTRUMENTATION/CALIBRATION**

Instruments used to perform the landfill surface emission testing consisted of the following:

- Trimble SiteFID Landfill Gas Monitor Portable Flame Ionization Detector (FID). This instrument measures methane in air over a range of 1 to 50,000 ppmv. The SiteFID meets the CARB requirements for combined instantaneous and integrated monitoring and was calibrated in accordance with United States Environmental Protection Agency (US EPA) Method 21 and manufacturers specifications.
- A portable wind data logger by Secure Digital is used to monitor and log wind speeds while performing emissions monitoring. Field observations and local weather station information is used to track weather conditions and rain events.

Instrument calibration logs and instantaneous weather information are shown in Appendix D and E.

## **SURFACE EMISSIONS MONITORING PROCEDURES**

Instantaneous and integrated SEM was conducted in accordance with NSPS and LMR requirements. Monitoring was performed with the FID inlet held within 2 inches of the landfill surface while a technician walked a grid in parallel paths not more than 25-feet apart over the surface of the landfill unless site safety conditions or prior monitoring results allowed 100-foot pathways. Cracks, holes and all cover penetrations in the surface were also tested. Instantaneous surface emissions readings were monitored continuously and recorded every 5 seconds. Any areas in exceedance of the 200 or 500 ppmv standards (reporting and compliance levels, respectively) were GPS tagged, any locations exceeding the 500 ppmv standard were also stake-marked for on-site personnel to perform remediation or repairs.

The integrated average is based on the readings stored on the instrument which are recorded every 5 seconds. The readings are then downloaded, and the averages are calculated for each grid using software provided by the instrument manufacturer. The readings are not provided in the report due to the volume of data but can be furnished upon request.

Recorded wind speed results are shown in Appendix F. Wind speed 15-minute averages were observed to remain below the approved Alternative Compliance Option (ACO) 10 miles per hour (based on 60 second intervals), and no instantaneous speeds exceeded 20 miles per hour during the testing. Monitoring was terminated in any instance average wind speeds exceeded 10 miles per hour until observed below the limit. No rainfall occurred during or within 24 hours of monitoring, in accordance

with the alternative compliance condition. Therefore, site meteorological conditions were within the approved alternatives of the LMR requirements on the above-mentioned dates.

## TESTING RESULTS

During this SEM event Tetra Tech performed the monitoring on 25-foot pathways in accordance with the rules as required under the LMR and NSPS. The intent of the monitoring was to identify any specific locations or areas of the landfill surface with organic compound concentrations exceeding the NSPS and/or LMR threshold limit values of 500 ppmv measured as methane for instantaneous monitoring, or an average methane concentration of 25 ppmv for the integrated monitoring.

During the initial monitoring events on October 5, 6, 7, and 8, 2020, there were zero (0) exceedances of the LMR integrated threshold limit of 25 ppmv as measured as methane above background and six (6) locations that exceeded the NSPS (Grids) and LMR (Grids and Penetrations) instantaneous level of 500 ppmv. System adjustments and repair work (repair of boreholes, vacuum increases to nearby extraction wells and re-compaction of soil) was performed by site personnel and subsequent 10-day re-monitoring on October 13, 2020 indicated that all the six (6) areas that were initially in exceedance had returned to compliance.

Follow-up monitoring was conducted at the one-month interval as required on October 30, 2020. All areas of initial exceedance were re-monitored during this time following additional abatement activities by site personnel. After the one-month confirmation re-monitoring event, zero (0) instantaneous locations remained above the NSPS and LMR thresholds of compliance. Based on these results no further testing is required until the first quarter of 2021. Results of the monitoring are shown in Appendix B and C (Tables 1, 2, and 3). Calibration logs for the monitoring equipment are provided in Appendix D.

Furthermore, as required by the NSPS for surface emissions, the landfill perimeter was walked and tested. Results of this testing indicated that no exceedances of the 500 ppmv limit were observed, therefore the site perimeter was in compliance with the requirements of the rule.

As mentioned above:

- Full grids 30, 31, 35, 36, 37, 41, 42, 49, 52, 53, 59, 61, 66, 67, 74, 75, 78, 83, 84, 94, 102, 103, 113, 123, 124, 134, 135, 136, 137, 147, 148, 149, 150, 160, 161, 162, 163, 164, 174, 175, 176, 177, 187, 188, 189, 190, 191, 192, 193, 201, 202, 203, 205, 211, 212, 213, 214, 215, 223, 224, 225, 227, 228, 229, 230, 231, 232, and 233 were not monitored due to active construction, heavy equipment traffic, or steep slopes (steeper than 33.5% or 18 degrees) which resulted in unsafe conditions. (see Appendix A).
- Partial grids 11, 13, 14, 15, 17, 18, 21, 22, 34, 40, 43, 44, 45, 48, 50, 51, 54, 57, 58, 60, 62, 65, 68, 70, 76, 79, 85, 87, 93, 95, 104, 112, 114, 125, 138, 151, 159, 173, 185, 186, 200, 204, 210, 216, 222, and 226 were not monitored due to active construction, heavy equipment traffic, or steep slopes (steeper than 33.5% or 18 degrees) which resulted in unsafe conditions. (see Appendix A).

As these areas were deemed unsafe by Tetra Tech personnel for entry due to active filling operations, construction, and other dangerous or unsafe conditions, which could cause a potential for injury of monitoring personnel (Appendix A).

Areas consisting of native soil (no waste in place) are also exempt from monitoring, in accordance with the LMR.

Any wells located in grids noted as exempt from monitoring due to health and safety concerns that remained accessible were monitored on an as-needed basis.

## **PROJECT SCHEDULE**

Following the initial events performed on October 5, 6, 7, and 8, 2020, subsequent re-monitoring was scheduled within 10 days. The first 10-day re-monitoring event was performed on October 13, 2020, and one-month confirmation testing of abated instantaneous readings was performed on October 30, 2020.

In accordance with the approved Scope of Work, Tetra Tech is scheduled to perform the first quarter NSPS and LMR monitoring event by March 2021 in all areas deemed safe for entry.

## **STANDARD PROVISIONS**

This report addresses conditions of the subject site during the testing dates only. Accordingly, we assume no responsibility for any changes that may occur subsequent to testing which could affect the surface emissions at the subject site or adjacent properties.

If you have any questions regarding this report, please contact Justin Ruhle at (925) 323-6866.

Thank you,



Justin Ruhle – O&M West Area Manager

This report contains the following Appendices:

**Appendix A:** Surface Grid Map

**Appendix B:** Instantaneous Monitoring Results

**Appendix C:** Integrated Monitoring Results

**Appendix D:** Calibration Logs

**Appendix E:** Weather Data

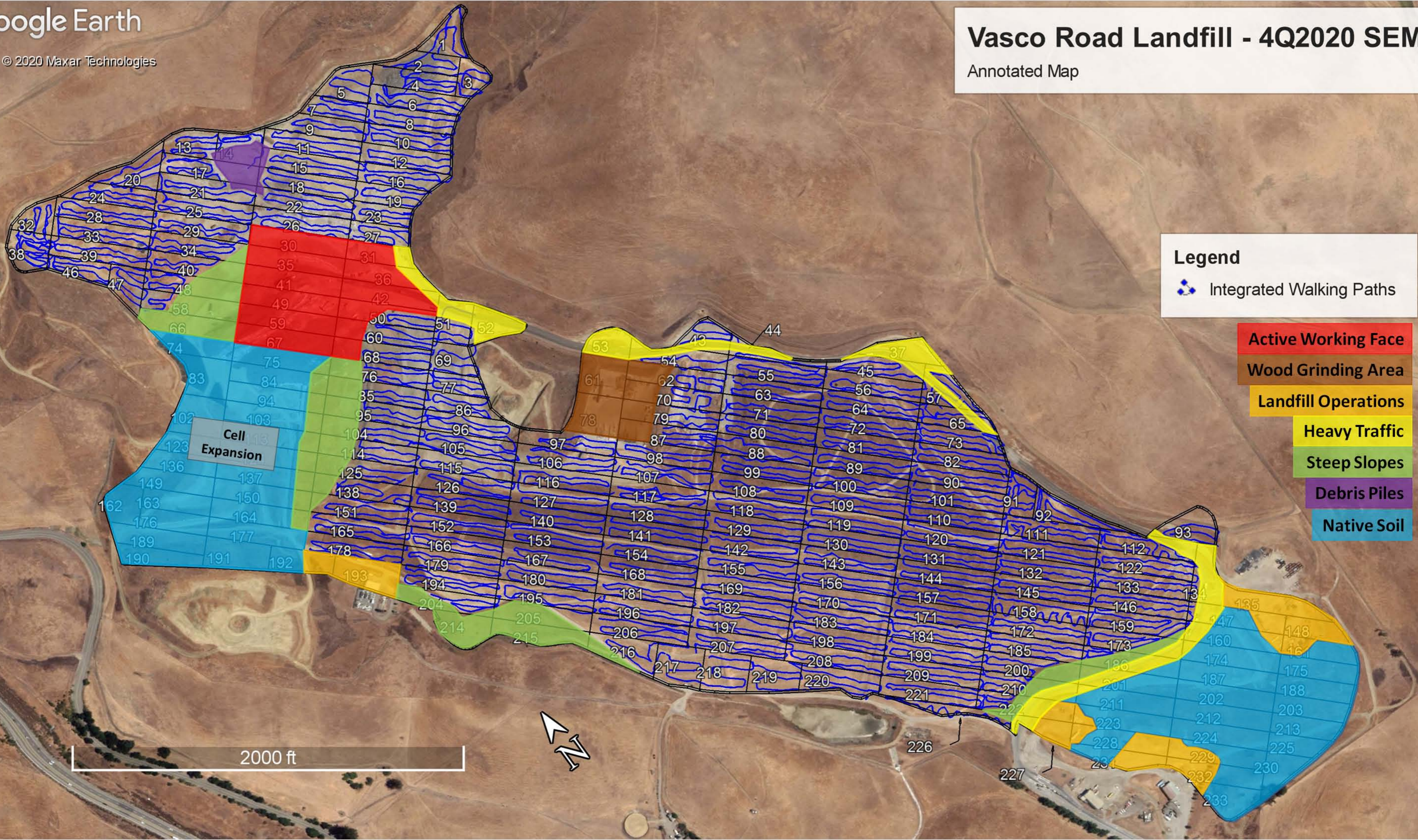
**Appendix F:** Wind Speed Data

# APPENDIX A

## Surface Grid Map

# Vasco Road Landfill - 4Q2020 SEM

Annotated Map





# **APPENDIX B**

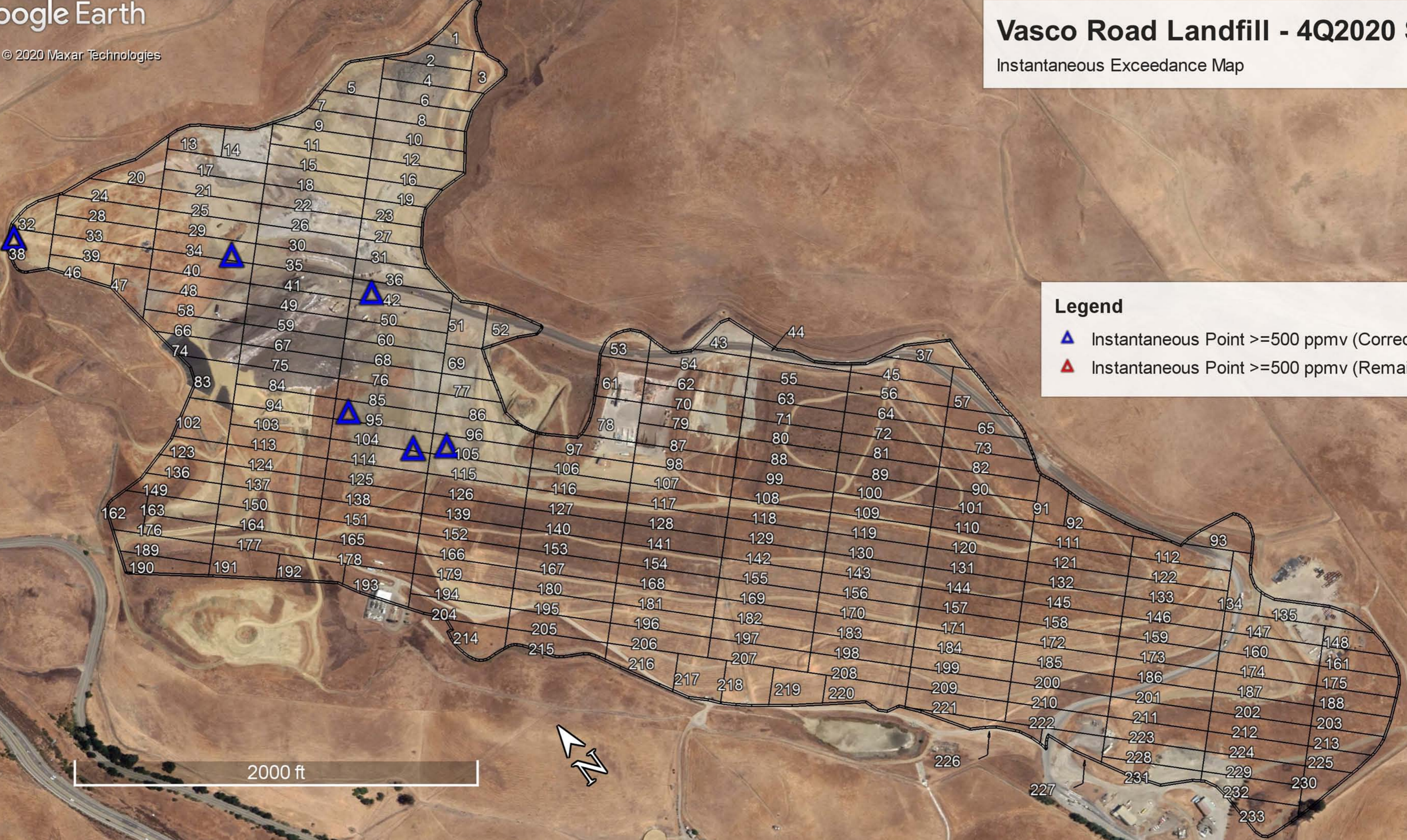
## **Instantaneous Monitoring Results**

# Vasco Road Landfill - 4Q2020 SEM

Instantaneous Exceedance Map

**Legend**

- ▲ Instantaneous Point  $\geq 500$  ppmv (Corrected)
- ▲ Instantaneous Point  $\geq 500$  ppmv (Remaining)



2000 ft



**Table 1**  
**SUMMARY OF INSTANTANEOUS METHANE CONCENTRATIONS BETWEEN 200-499 PPMV**  
**4Q2020 Vasco Road Landfill**

FILE NAME	DATE	GRID NO.	ID NO.	LATITUDE WGS84	LONGITUDE WGS84	METHANE CONCENTRATION (ppmv)
MONITOR_Vasco_GRID_6_2020_Q4_Initial.csv	10/6/2020	6	134	37.759538	-121.722768	248.5
MONITOR_Vasco_GRID_16_2020_Q4_Initial.csv	10/6/2020	16	36	37.758957	-121.723715	237.0
MONITOR_Vasco_GRID_92_2020_Q4_Initial.csv	10/6/2020	92	85	37.749532	-121.717815	213.7
MONITOR_Vasco_GRID_92_2020_Q4_Initial.csv	10/6/2020	92	100	37.750120	-121.718417	222.3
MONITOR_Vascowells_GRID_12LR01_2020_Q4_Initial.csv	10/5/2020	12LR01	NA	37.761903	-121.730403	458.7
MONITOR_Vascowells_GRID_EW2006_2020_Q4_Initial.csv	10/5/2020	EW2006	NA	37.756975	-121.727117	365.6
MONITOR_Vascowells_GRID_EW92_2020_Q4_Initial.csv	10/5/2020	EW92	NA	37.758107	-121.725898	364.2
MONITOR_Vascowells_GRID_EW133_2020_Q4_Initial.csv	10/5/2020	EW133	NA	37.759813	-121.727138	362.5
MONITOR_Vascowells_GRID_EW139_2020_Q4_Initial.csv	10/5/2020	EW139	NA	37.757390	-121.726073	290.0
MONITOR_Vascowells_GRID_EW110_2020_Q4_Initial.csv	10/5/2020	EW110	NA	37.758773	-121.725627	246.0
MONITOR_Vascowells_GRID_EW116_2020_Q4_Initial.csv	10/5/2020	EW116	NA	37.760025	-121.723188	240.9
MONITOR_Vascowells_GRID_12LR02_2020_Q4_Initial.csv	10/5/2020	12LR02	NA	37.760583	-121.729655	223.7
MONITOR_Vascowells_GRID_EW94_2020_Q4_Initial.csv	10/5/2020	EW94	NA	37.757543	-121.726070	219.6

**Table 2**  
**SUMMARY OF INSTANTANEOUS METHANE CONCENTRATIONS ≥500 PPMV**  
**INCLUDING REMONITORING RESULTS**  
**4Q2020 Vasco Road Landfill**

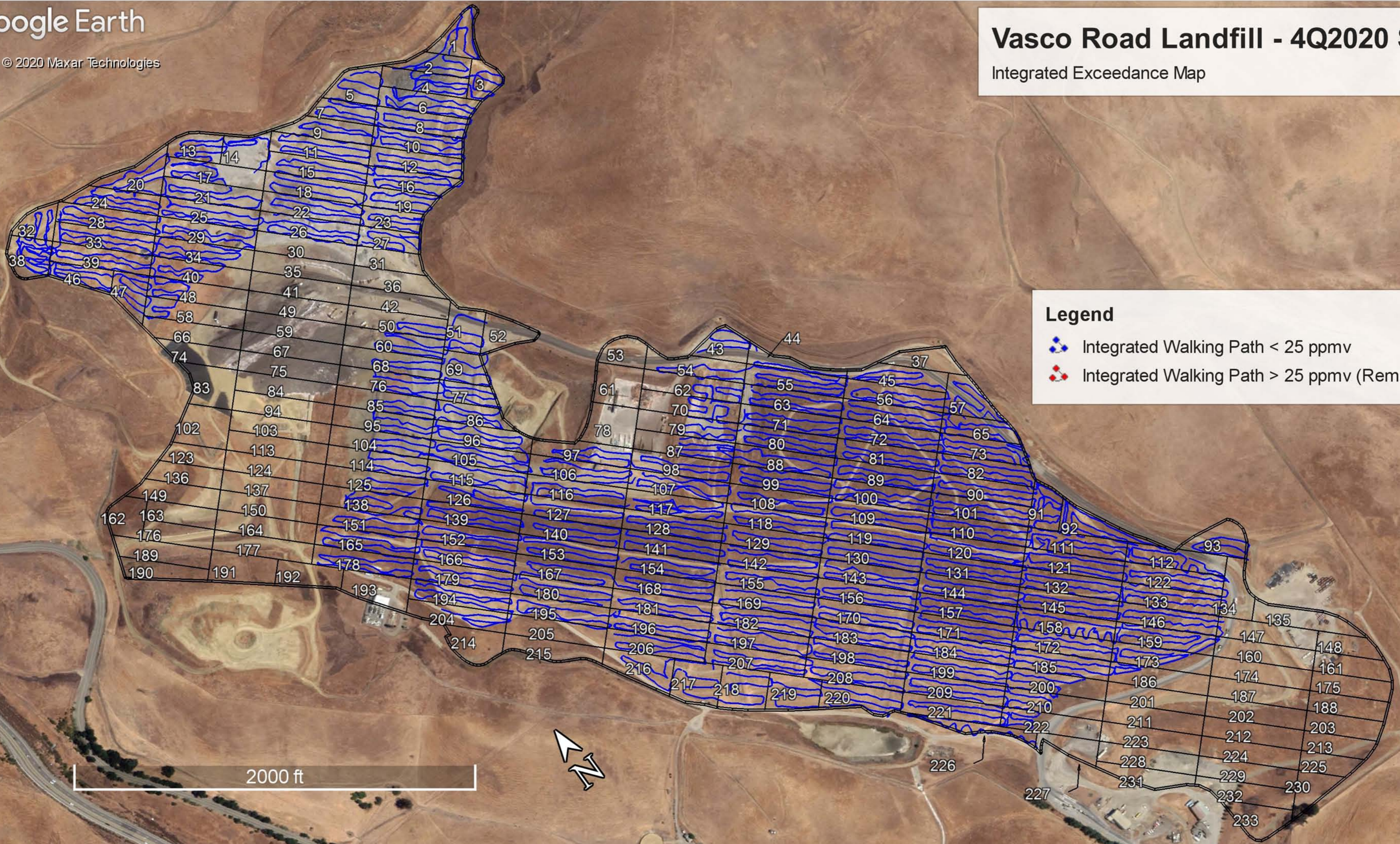
FILE NAME	DATE	GRID NO. / WELL ID.	ID NO.	LATITUDE WGS84	LONGITUDE WGS84	METHANE CONCENTRATION (ppmv)
MONITOR_Vascowells_GRID_12GT05_2020_Q4_Initial.csv	10/5/2020	12GT05	NA	37.761825	-121.730403	5073.6
MONITOR_Vascowells_GRID_12GT05_2020_Q4_10Day_1.csv	10/13/2020	12GT05	NA	37.761830	-121.730437	357.3
MONITOR_Vascowells_GRID_12GT05_2020_Q4_Month.csv	10/30/2020	12GT05	NA	37.761835	-121.730425	169.4
MONITOR_Vascowells_GRID_EW1001_2020_Q4_Initial.csv	10/5/2020	EW1001	NA	37.758375	-121.725993	861.4
MONITOR_Vascowells_GRID_EW1001_2020_Q4_10Day_1.csv	10/13/2020	EW1001	NA	37.758402	-121.726008	144.3
MONITOR_Vascowells_GRID_EW1001_2020_Q4_Month.csv	10/30/2020	EW1001	NA	37.758378	-121.726002	159.5
MONITOR_Vascowells_GRID_EW1005_2020_Q4_Initial.csv	10/5/2020	EW1005	NA	37.756098	-121.726498	737.6
MONITOR_Vascowells_GRID_EW1005_2020_Q4_10Day_1.csv	10/13/2020	EW1005	NA	37.756122	-121.726512	116.2
MONITOR_Vascowells_GRID_EW1005_2020_Q4_Month.csv	10/30/2020	EW1005	NA	37.756107	-121.726498	45.4
MONITOR_Vascowells_GRID_EW128_2020_Q4_Initial.csv	10/5/2020	EW128	NA	37.759900	-121.727557	1399.8
MONITOR_Vascowells_GRID_EW128_2020_Q4_10Day_1.csv	10/13/2020	EW128	NA	37.759897	-121.727567	40.3
MONITOR_Vascowells_GRID_EW128_2020_Q4_Month.csv	10/30/2020	EW128	NA	37.759943	-121.727558	1.1
MONITOR_Vascowells_GRID_EW140_2020_Q4_Initial.csv	10/5/2020	EW140	NA	37.757252	-121.727517	734.8
MONITOR_Vascowells_GRID_EW140_2020_Q4_10Day_1.csv	10/13/2020	EW140	NA	37.757272	-121.727508	17.0
MONITOR_Vascowells_GRID_EW140_2020_Q4_Month.csv	10/30/2020	EW140	NA	37.757235	-121.727535	76.4
MONITOR_Vascowells_GRID_EW98_2020_Q4_Initial.csv	10/5/2020	EW98	NA	37.756335	-121.726988	2582.4
MONITOR_Vascowells_GRID_EW98_2020_Q4_10Day_1.csv	10/13/2020	EW98	NA	37.756370	-121.726995	87.3
MONITOR_Vascowells_GRID_EW98_2020_Q4_Month.csv	10/30/2020	EW98	NA	37.756372	-121.726990	65.9

# APPENDIX C



## Integrated Monitoring Results

# Vasco Road Landfill - 4Q2020 SEM

Integrated Exceedance Map



### Legend

-  Integrated Walking Path < 25 ppmv
-  Integrated Walking Path > 25 ppmv (Remaining)

**Table 3**  
**SUMMARY OF INTEGRATED METHANE CONCENTRATIONS**  
**INCLUDING REMONITORING RESULTS**  
**4Q2020 Vasco Road Landfill**

FILE NAME	DATE	GRID NO.	INTEGRATED METHANE CONCENTRATION (ppmv)
MONITOR_Vasco_GRID_1_2020_Q4_Initial.csv	10/6/2020	1	0.4
MONITOR_Vasco_GRID_2_2020_Q4_Initial.csv	10/6/2020	2	0.2
MONITOR_Vasco_GRID_3_2020_Q4_Initial.csv	10/6/2020	3	1.8
MONITOR_Vasco_GRID_4_2020_Q4_Initial.csv	10/6/2020	4	0.8
MONITOR_Vasco_GRID_5_2020_Q4_Initial.csv	10/6/2020	5	0.3
MONITOR_Vasco_GRID_6_2020_Q4_Initial.csv	10/6/2020	6	6.7
MONITOR_Vasco_GRID_7_2020_Q4_Initial.csv	10/6/2020	7	2.5
MONITOR_Vasco_GRID_8_2020_Q4_Initial.csv	10/6/2020	8	7.4
MONITOR_Vasco_GRID_9_2020_Q4_Initial.csv	10/6/2020	9	0.4
MONITOR_Vasco_GRID_10_2020_Q4_Initial.csv	10/6/2020	10	9.2
MONITOR_Vasco_GRID_11_2020_Q4_Initial.csv	10/6/2020	11	0.3
MONITOR_Vasco_GRID_12_2020_Q4_Initial.csv	10/6/2020	12	6.4
MONITOR_Vasco_GRID_13_2020_Q4_Initial.csv	10/6/2020	13	4.6
MONITOR_Vasco_GRID_14_2020_Q4_Initial.csv	10/6/2020	14	3.2
MONITOR_Vasco_GRID_15_2020_Q4_Initial.csv	10/6/2020	15	0.7
MONITOR_Vasco_GRID_16_2020_Q4_Initial.csv	10/6/2020	16	7.4
MONITOR_Vasco_GRID_17_2020_Q4_Initial.csv	10/6/2020	17	0.2
MONITOR_Vasco_GRID_18_2020_Q4_Initial.csv	10/6/2020	18	3.7
MONITOR_Vasco_GRID_19_2020_Q4_Initial.csv	10/6/2020	19	2.0
MONITOR_Vasco_GRID_20_2020_Q4_Initial.csv	10/6/2020	20	0.1
MONITOR_Vasco_GRID_21_2020_Q4_Initial.csv	10/6/2020	21	0.1
MONITOR_Vasco_GRID_22_2020_Q4_Initial.csv	10/6/2020	22	0.6
MONITOR_Vasco_GRID_23_2020_Q4_Initial.csv	10/6/2020	23	6.6
MONITOR_Vasco_GRID_24_2020_Q4_Initial.csv	10/6/2020	24	0.1
MONITOR_Vasco_GRID_25_2020_Q4_Initial.csv	10/6/2020	25	0.1
MONITOR_Vasco_GRID_26_2020_Q4_Initial.csv	10/6/2020	26	0.2
MONITOR_Vasco_GRID_27_2020_Q4_Initial.csv	10/6/2020	27	10.1
MONITOR_Vasco_GRID_28_2020_Q4_Initial.csv	10/6/2020	28	0.1
MONITOR_Vasco_GRID_29_2020_Q4_Initial.csv	10/6/2020	29	0.1
MONITOR_Vasco_GRID_32_2020_Q4_Initial.csv	10/6/2020	32	3.6
MONITOR_Vasco_GRID_33_2020_Q4_Initial.csv	10/6/2020	33	0.2
MONITOR_Vasco_GRID_34_2020_Q4_Initial.csv	10/6/2020	34	1.4
MONITOR_Vasco_GRID_38_2020_Q4_Initial.csv	10/6/2020	38	1.6
MONITOR_Vasco_GRID_39_2020_Q4_Initial.csv	10/6/2020	39	0.3
MONITOR_Vasco_GRID_40_2020_Q4_Initial.csv	10/6/2020	40	0.9
MONITOR_Vasco_GRID_43_2020_Q4_Initial.csv	10/8/2020	43	0.1
MONITOR_Vasco_GRID_44_2020_Q4_Initial.csv	10/7/2020	44	6.4
MONITOR_Vasco_GRID_45_2020_Q4_Initial.csv	10/7/2020	45	1.2
MONITOR_Vasco_GRID_46_2020_Q4_Initial.csv	10/6/2020	46	1.8
MONITOR_Vasco_GRID_47_2020_Q4_Initial.csv	10/6/2020	47	1.4
MONITOR_Vasco_GRID_48_2020_Q4_Initial.csv	10/6/2020	48	0.8
MONITOR_Vasco_GRID_50_2020_Q4_Initial.csv	10/8/2020	50	0.4
MONITOR_Vasco_GRID_51_2020_Q4_Initial.csv	10/8/2020	51	0.0
MONITOR_Vasco_GRID_54_2020_Q4_Initial.csv	10/8/2020	54	0.1
MONITOR_Vasco_GRID_55_2020_Q4_Initial.csv	10/7/2020	55	0.7
MONITOR_Vasco_GRID_56_2020_Q4_Initial.csv	10/7/2020	56	0.1
MONITOR_Vasco_GRID_57_2020_Q4_Initial.csv	10/7/2020	57	0.2
MONITOR_Vasco_GRID_58_2020_Q4_Initial.csv	10/6/2020	58	2.1
MONITOR_Vasco_GRID_60_2020_Q4_Initial.csv	10/8/2020	60	2.8
MONITOR_Vasco_GRID_62_2020_Q4_Initial.csv	10/8/2020	62	0.2
MONITOR_Vasco_GRID_63_2020_Q4_Initial.csv	10/7/2020	63	0.0
MONITOR_Vasco_GRID_64_2020_Q4_Initial.csv	10/7/2020	64	0.2
MONITOR_Vasco_GRID_65_2020_Q4_Initial.csv	10/7/2020	65	0.8
MONITOR_Vasco_GRID_68_2020_Q4_Initial.csv	10/8/2020	68	0.7
MONITOR_Vasco_GRID_69_2020_Q4_Initial.csv	10/8/2020	69	0.0
MONITOR_Vasco_GRID_70_2020_Q4_Initial.csv	10/8/2020	70	0.0

**Table 3**  
**SUMMARY OF INTEGRATED METHANE CONCENTRATIONS**  
**INCLUDING REMONITORING RESULTS**  
**4Q2020 Vasco Road Landfill**

FILE NAME	DATE	GRID NO.	INTEGRATED METHANE CONCENTRATION (ppmv)
MONITOR_Vasco_GRID_71_2020_Q4_Initial.csv	10/7/2020	71	0.0
MONITOR_Vasco_GRID_72_2020_Q4_Initial.csv	10/7/2020	72	0.1
MONITOR_Vasco_GRID_73_2020_Q4_Initial.csv	10/7/2020	73	3.8
MONITOR_Vasco_GRID_76_2020_Q4_Initial.csv	10/8/2020	76	1.0
MONITOR_Vasco_GRID_77_2020_Q4_Initial.csv	10/8/2020	77	0.1
MONITOR_Vasco_GRID_79_2020_Q4_Initial.csv	10/8/2020	79	0.1
MONITOR_Vasco_GRID_80_2020_Q4_Initial.csv	10/7/2020	80	0.0
MONITOR_Vasco_GRID_81_2020_Q4_Initial.csv	10/7/2020	81	0.6
MONITOR_Vasco_GRID_82_2020_Q4_Initial.csv	10/7/2020	82	3.2
MONITOR_Vasco_GRID_85_2020_Q4_Initial.csv	10/8/2020	85	0.6
MONITOR_Vasco_GRID_86_2020_Q4_Initial.csv	10/8/2020	86	0.1
MONITOR_Vasco_GRID_87_2020_Q4_Initial.csv	10/8/2020	87	0.0
MONITOR_Vasco_GRID_88_2020_Q4_Initial.csv	10/7/2020	88	0.1
MONITOR_Vasco_GRID_89_2020_Q4_Initial.csv	10/7/2020	89	0.1
MONITOR_Vasco_GRID_90_2020_Q4_Initial.csv	10/7/2020	90	2.0
MONITOR_Vasco_GRID_91_2020_Q4_Initial.csv	10/6/2020	91	1.9
MONITOR_Vasco_GRID_92_2020_Q4_Initial.csv	10/6/2020	92	13.2
MONITOR_Vasco_GRID_93_2020_Q4_Initial.csv	10/6/2020	93	5.6
MONITOR_Vasco_GRID_95_2020_Q4_Initial.csv	10/8/2020	95	1.9
MONITOR_Vasco_GRID_96_2020_Q4_Initial.csv	10/8/2020	96	0.3
MONITOR_Vasco_GRID_97_2020_Q4_Initial.csv	10/8/2020	97	0.0
MONITOR_Vasco_GRID_98_2020_Q4_Initial.csv	10/8/2020	98	0.1
MONITOR_Vasco_GRID_99_2020_Q4_Initial.csv	10/7/2020	99	0.0
MONITOR_Vasco_GRID_100_2020_Q4_Initial.csv	10/7/2020	100	0.4
MONITOR_Vasco_GRID_101_2020_Q4_Initial.csv	10/7/2020	101	1.1
MONITOR_Vasco_GRID_104_2020_Q4_Initial.csv	10/8/2020	104	2.7
MONITOR_Vasco_GRID_105_2020_Q4_Initial.csv	10/8/2020	105	1.1
MONITOR_Vasco_GRID_106_2020_Q4_Initial.csv	10/8/2020	106	0.1
MONITOR_Vasco_GRID_107_2020_Q4_Initial.csv	10/8/2020	107	0.0
MONITOR_Vasco_GRID_108_2020_Q4_Initial.csv	10/7/2020	108	0.1
MONITOR_Vasco_GRID_109_2020_Q4_Initial.csv	10/7/2020	109	0.1
MONITOR_Vasco_GRID_110_2020_Q4_Initial.csv	10/7/2020	110	0.3
MONITOR_Vasco_GRID_111_2020_Q4_Initial.csv	10/6/2020	111	5.0
MONITOR_Vasco_GRID_112_2020_Q4_Initial.csv	10/6/2020	112	1.4
MONITOR_Vasco_GRID_114_2020_Q4_Initial.csv	10/8/2020	114	3.1
MONITOR_Vasco_GRID_115_2020_Q4_Initial.csv	10/8/2020	115	1.9
MONITOR_Vasco_GRID_116_2020_Q4_Initial.csv	10/8/2020	116	0.1
MONITOR_Vasco_GRID_117_2020_Q4_Initial.csv	10/8/2020	117	0.0
MONITOR_Vasco_GRID_118_2020_Q4_Initial.csv	10/7/2020	118	0.2
MONITOR_Vasco_GRID_119_2020_Q4_Initial.csv	10/7/2020	119	0.1
MONITOR_Vasco_GRID_120_2020_Q4_Initial.csv	10/7/2020	120	0.2
MONITOR_Vasco_GRID_121_2020_Q4_Initial.csv	10/6/2020	121	1.4
MONITOR_Vasco_GRID_122_2020_Q4_Initial.csv	10/6/2020	122	2.0
MONITOR_Vasco_GRID_125_2020_Q4_Initial.csv	10/8/2020	125	1.3
MONITOR_Vasco_GRID_126_2020_Q4_Initial.csv	10/8/2020	126	0.2
MONITOR_Vasco_GRID_127_2020_Q4_Initial.csv	10/8/2020	127	0.1
MONITOR_Vasco_GRID_128_2020_Q4_Initial.csv	10/7/2020	128	0.1
MONITOR_Vasco_GRID_129_2020_Q4_Initial.csv	10/7/2020	129	0.0
MONITOR_Vasco_GRID_130_2020_Q4_Initial.csv	10/7/2020	130	0.2
MONITOR_Vasco_GRID_131_2020_Q4_Initial.csv	10/7/2020	131	0.2
MONITOR_Vasco_GRID_132_2020_Q4_Initial.csv	10/7/2020	132	0.1
MONITOR_Vasco_GRID_133_2020_Q4_Initial.csv	10/6/2020	133	0.4
MONITOR_Vasco_GRID_138_2020_Q4_Initial.csv	10/8/2020	138	1.6
MONITOR_Vasco_GRID_139_2020_Q4_Initial.csv	10/8/2020	139	0.2
MONITOR_Vasco_GRID_140_2020_Q4_Initial.csv	10/8/2020	140	0.0
MONITOR_Vasco_GRID_141_2020_Q4_Initial.csv	10/7/2020	141	0.1



**Table 3**  
**SUMMARY OF INTEGRATED METHANE CONCENTRATIONS**  
**INCLUDING REMONITORING RESULTS**  
**4Q2020 Vasco Road Landfill**

FILE NAME	DATE	GRID NO.	INTEGRATED METHANE CONCENTRATION (ppmv)
MONITOR_Vasco_GRID_142_2020_Q4_Initial.csv	10/7/2020	142	0.1
MONITOR_Vasco_GRID_143_2020_Q4_Initial.csv	10/7/2020	143	0.1
MONITOR_Vasco_GRID_144_2020_Q4_Initial.csv	10/7/2020	144	0.0
MONITOR_Vasco_GRID_145_2020_Q4_Initial.csv	10/7/2020	145	0.1
MONITOR_Vasco_GRID_146_2020_Q4_Initial.csv	10/6/2020	146	0.5
MONITOR_Vasco_GRID_151_2020_Q4_Initial.csv	10/8/2020	151	0.7
MONITOR_Vasco_GRID_152_2020_Q4_Initial.csv	10/8/2020	152	0.1
MONITOR_Vasco_GRID_153_2020_Q4_Initial.csv	10/8/2020	153	0.0
MONITOR_Vasco_GRID_154_2020_Q4_Initial.csv	10/8/2020	154	0.0
MONITOR_Vasco_GRID_155_2020_Q4_Initial.csv	10/7/2020	155	0.0
MONITOR_Vasco_GRID_156_2020_Q4_Initial.csv	10/7/2020	156	0.1
MONITOR_Vasco_GRID_157_2020_Q4_Initial.csv	10/7/2020	157	0.1
MONITOR_Vasco_GRID_158_2020_Q4_Initial.csv	10/7/2020	158	0.2
MONITOR_Vasco_GRID_159_2020_Q4_Initial.csv	10/6/2020	159	0.3
MONITOR_Vasco_GRID_165_2020_Q4_Initial.csv	10/8/2020	165	2.8
MONITOR_Vasco_GRID_166_2020_Q4_Initial.csv	10/8/2020	166	0.2
MONITOR_Vasco_GRID_167_2020_Q4_Initial.csv	10/8/2020	167	0.0
MONITOR_Vasco_GRID_168_2020_Q4_Initial.csv	10/8/2020	168	0.0
MONITOR_Vasco_GRID_169_2020_Q4_Initial.csv	10/7/2020	169	0.0
MONITOR_Vasco_GRID_170_2020_Q4_Initial.csv	10/7/2020	170	0.1
MONITOR_Vasco_GRID_171_2020_Q4_Initial.csv	10/7/2020	171	0.1
MONITOR_Vasco_GRID_172_2020_Q4_Initial.csv	10/6/2020	172	0.2
MONITOR_Vasco_GRID_173_2020_Q4_Initial.csv	10/6/2020	173	0.2
MONITOR_Vasco_GRID_178_2020_Q4_Initial.csv	10/8/2020	178	0.1
MONITOR_Vasco_GRID_179_2020_Q4_Initial.csv	10/8/2020	179	0.1
MONITOR_Vasco_GRID_180_2020_Q4_Initial.csv	10/8/2020	180	0.0
MONITOR_Vasco_GRID_181_2020_Q4_Initial.csv	10/7/2020	181	0.9
MONITOR_Vasco_GRID_182_2020_Q4_Initial.csv	10/7/2020	182	0.3
MONITOR_Vasco_GRID_183_2020_Q4_Initial.csv	10/7/2020	183	0.2
MONITOR_Vasco_GRID_184_2020_Q4_Initial.csv	10/7/2020	184	0.2
MONITOR_Vasco_GRID_185_2020_Q4_Initial.csv	10/6/2020	185	0.2
MONITOR_Vasco_GRID_186_2020_Q4_Initial.csv	10/6/2020	186	0.1
MONITOR_Vasco_GRID_194_2020_Q4_Initial.csv	10/8/2020	194	0.1
MONITOR_Vasco_GRID_195_2020_Q4_Initial.csv	10/8/2020	195	0.0
MONITOR_Vasco_GRID_196_2020_Q4_Initial.csv	10/7/2020	196	0.1
MONITOR_Vasco_GRID_197_2020_Q4_Initial.csv	10/7/2020	197	0.0
MONITOR_Vasco_GRID_198_2020_Q4_Initial.csv	10/7/2020	198	0.1
MONITOR_Vasco_GRID_199_2020_Q4_Initial.csv	10/7/2020	199	0.3
MONITOR_Vasco_GRID_200_2020_Q4_Initial.csv	10/6/2020	200	0.3
MONITOR_Vasco_GRID_204_2020_Q4_Initial.csv	10/8/2020	204	0.1
MONITOR_Vasco_GRID_206_2020_Q4_Initial.csv	10/7/2020	206	0.1
MONITOR_Vasco_GRID_207_2020_Q4_Initial.csv	10/7/2020	207	0.0
MONITOR_Vasco_GRID_208_2020_Q4_Initial.csv	10/7/2020	208	1.0
MONITOR_Vasco_GRID_209_2020_Q4_Initial.csv	10/7/2020	209	0.7
MONITOR_Vasco_GRID_210_2020_Q4_Initial.csv	10/6/2020	210	0.1
MONITOR_Vasco_GRID_216_2020_Q4_Initial.csv	10/7/2020	216	0.6
MONITOR_Vasco_GRID_217_2020_Q4_Initial.csv	10/7/2020	217	0.1
MONITOR_Vasco_GRID_218_2020_Q4_Initial.csv	10/7/2020	218	0.0
MONITOR_Vasco_GRID_219_2020_Q4_Initial.csv	10/7/2020	219	0.1
MONITOR_Vasco_GRID_220_2020_Q4_Initial.csv	10/7/2020	220	0.2
MONITOR_Vasco_GRID_221_2020_Q4_Initial.csv	10/6/2020	221	0.1
MONITOR_Vasco_GRID_222_2020_Q4_Initial.csv	10/6/2020	222	0.3
MONITOR_Vasco_GRID_226_2020_Q4_Initial.csv	10/6/2020	226	0.3

# APPENDIX D

## Calibration Logs

MONITOR TYPE	OPERATOR NAME	FID ID	FILE SAVE TIME	AVG PRECISION (%)	AVG RESPONSE TIME (SECONDS)					FID ID
VERIFICATION SUMMARY	Field Solutions, Inc.	88680F62C147	10/5/2020 8:33	-0.7	4.3					
MONITOR TYPE	CAL GAS SERIAL NUMBER	CAL GAS TYPE	CAL GAS CONCENTRATION (ppmv)	MEASURED CONCENTRATION (ppmv)	DIFFERENCE (ppmv)	DIFFERENCE (%)	ZERO AIR PPM	TIMESTAMP	FID ID	
PRECISION MEASUREMENT		CH4 (Methane)	500	497.9	-2.1	-0.4	0	10/5/2020 8:31	88680F62C147	
PRECISION MEASUREMENT		CH4 (Methane)	500	495.7	-4.3	-0.9	0	10/5/2020 8:32	88680F62C147	
PRECISION MEASUREMENT		CH4 (Methane)	500	496.1	-3.9	-0.8	0	10/5/2020 8:32	88680F62C147	
MONITOR TYPE	CAL GAS SERIAL NUMBER	CAL GAS TYPE	CAL GAS CONCENTRATION (ppmv)	TARGET CONCENTRATION (ppmv)	INITIAL CONCENTRATION (ppmv)	RESPONSE TIME (seconds)	TIMESTAMP	FID ID		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	471.7	0	4	10/5/2020 8:32	88680F62C147		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	471.7	0	4	10/5/2020 8:33	88680F62C147		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	471.7	0	5	10/5/2020 8:33	88680F62C147		

MONITOR TYPE	OPERATOR NAME	FID ID	FILE SAVE TIME	AVG PRECISION (%)	AVG RESPONSE TIME (SECONDS)					FID ID
VERIFICATION SUMMARY	Field Solutions, Inc.	000780DABAC4	10/5/2020 9:03	-0.5	5					
MONITOR TYPE	CAL GAS SERIAL NUMBER	CAL GAS TYPE	CAL GAS CONCENTRATION (ppmv)	MEASURED CONCENTRATION (ppmv)	DIFFERENCE (ppmv)	DIFFERENCE (%)	ZERO AIR PPM	TIMESTAMP	FID ID	
PRECISION MEASUREMENT		CH4 (Methane)	500	497.8	-2.2	-0.4	0	10/5/2020 9:00	000780DABAC4	
PRECISION MEASUREMENT		CH4 (Methane)	500	497.8	-2.2	-0.4	0	10/5/2020 9:01	000780DABAC4	
PRECISION MEASUREMENT		CH4 (Methane)	500	497.1	-2.9	-0.6	0	10/5/2020 9:01	000780DABAC4	
MONITOR TYPE	CAL GAS SERIAL NUMBER	CAL GAS TYPE	CAL GAS CONCENTRATION (ppmv)	TARGET CONCENTRATION (ppmv)	INITIAL CONCENTRATION (ppmv)	RESPONSE TIME (seconds)	TIMESTAMP	FID ID		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.7	0	5	10/5/2020 9:02	000780DABAC4		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.7	0	5	10/5/2020 9:02	000780DABAC4		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	472.7	0	5	10/5/2020 9:03	000780DABAC4		

MONITOR TYPE	OPERATOR NAME	FID ID	FILE SAVE TIME	AVG PRECISION (%)	AVG RESPONSE TIME (SECONDS)					FID ID
VERIFICATION SUMMARY	Field Solutions, Inc.	88680FA6E68F	10/6/2020 8:26	-0.2	5					
MONITOR TYPE	CAL GAS SERIAL NUMBER	CAL GAS TYPE	CAL GAS CONCENTRATION (ppmv)	MEASURED CONCENTRATION (ppmv)	DIFFERENCE (ppmv)	DIFFERENCE (%)	ZERO AIR PPM	TIMESTAMP	FID ID	
PRECISION MEASUREMENT		CH4 (Methane)	500	498.9	-1.1	-0.2	0	10/6/2020 8:24	88680FA6E68F	
PRECISION MEASUREMENT		CH4 (Methane)	500	499.3	-0.7	-0.1	0	10/6/2020 8:24	88680FA6E68F	
PRECISION MEASUREMENT		CH4 (Methane)	500	498.9	-1.1	-0.2	0	10/6/2020 8:25	88680FA6E68F	
MONITOR TYPE	CAL GAS SERIAL NUMBER	CAL GAS TYPE	CAL GAS CONCENTRATION (ppmv)	TARGET CONCENTRATION (ppmv)	INITIAL CONCENTRATION (ppmv)	RESPONSE TIME (seconds)	TIMESTAMP	FID ID		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	474.1	0	5	10/6/2020 8:25	88680FA6E68F		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	474.1	0	5	10/6/2020 8:26	88680FA6E68F		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	474.1	0	5	10/6/2020 8:26	88680FA6E68F		

MONITORING TYPE	OPERATOR NAME	INSTRUMENT ID	FILE SAVE TIME	AVG PRECISION (%)	AVG RESPONSE TIME (SECONDS)					INSTRUMENT ID
VERIFICATION SUMMARY	Field Solutions, Inc.	000780DABAC4	10/6/2020 8:28	-0.2	5.3					
MONITORING TYPE	CAL GAS SERIAL NUMBER	CAL GAS TYPE	CAL GAS CONCENTRATION (ppmv)	DETECTOR CONCENTRATION (ppmv)	DIFFERENCE (ppmv)	DIFFERENCE (%)	ZERO AIR PPM	TIMESTAMP	INSTRUMENT ID	
PRECISION MEASUREMENT		CH4 (Methane)	500	499.5	-0.5	-0.1	0	10/6/2020 8:25	000780DABAC4	
PRECISION MEASUREMENT		CH4 (Methane)	500	499.1	-0.9	-0.2	0	10/6/2020 8:25	000780DABAC4	
PRECISION MEASUREMENT		CH4 (Methane)	500	498.1	-1.9	-0.4	0	10/6/2020 8:25	000780DABAC4	
MONITORING TYPE	CAL GAS SERIAL NUMBER	CAL GAS TYPE	CAL GAS CONCENTRATION (ppmv)	TARGET CONCENTRATION (ppmv)	INITIAL CONCENTRATION (ppmv)	RESPONSE TIME (seconds)	TIMESTAMP	INSTRUMENT ID		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	474	0	5	10/6/2020 8:26	000780DABAC4		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	474	0	5	10/6/2020 8:27	000780DABAC4		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	474	0	6	10/6/2020 8:27	000780DABAC4		

MONITORING TYPE	OPERATOR NAME	INSTRUMENT ID	FILE SAVE TIME	AVG PRECISION (%)	AVG RESPONSE TIME (SECONDS)					INSTRUMENT ID
VERIFICATION SUMMARY	Field Solutions, Inc.	88680F62C147	10/7/2020 7:50	-1.1	4.7					
MONITORING TYPE	CAL GAS SERIAL NUMBER	CAL GAS TYPE	CAL GAS CONCENTRATION (ppmv)	DETECTOR CONCENTRATION (ppmv)	DIFFERENCE (ppmv)	DIFFERENCE (%)	ZERO AIR PPM	TIMESTAMP	INSTRUMENT ID	
PRECISION MEASUREMENT		CH4 (Methane)	500	496.6	-3.4	-0.7	0	10/7/2020 7:47	88680F62C147	
PRECISION MEASUREMENT		CH4 (Methane)	500	491.7	-8.3	-1.7	1.9	10/7/2020 7:48	88680F62C147	
PRECISION MEASUREMENT		CH4 (Methane)	500	494.7	-5.3	-1.1	0	10/7/2020 7:48	88680F62C147	
MONITORING TYPE	CAL GAS SERIAL NUMBER	CAL GAS TYPE	CAL GAS CONCENTRATION (ppmv)	TARGET CONCENTRATION (ppmv)	INITIAL CONCENTRATION (ppmv)	RESPONSE TIME (seconds)	TIMESTAMP	INSTRUMENT ID		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	469.6	0	5	10/7/2020 7:49	88680F62C147		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	469.6	0	5	10/7/2020 7:49	88680F62C147		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	469.6	0	4	10/7/2020 7:50	88680F62C147		

<b>MONITORING TYPE</b>	<b>OPERATOR NAME</b>	<b>INSTRUMENT ID</b>	<b>FILE SAVE TIME</b>	<b>AVG PRECISION (%)</b>	<b>AVG RESPONSE TIME (SECONDS)</b>					
VERIFICATION SUMMARY	Field Solutions, Inc.	88680FA6E68F	10/7/2020 7:56	-1.1	5					
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>DETECTOR CONCENTRATION (ppmv)</b>	<b>DIFFERENCE (ppmv)</b>	<b>DIFFERENCE (%)</b>	<b>ZERO AIR PPM</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>	
PRECISION MEASUREMENT		CH4 (Methane)	500	494.3	-5.7	-1.1	0	10/7/2020 7:54	88680FA6E68F	
PRECISION MEASUREMENT		CH4 (Methane)	500	494.2	-5.8	-1.2	0	10/7/2020 7:55	88680FA6E68F	
PRECISION MEASUREMENT		CH4 (Methane)	500	494.4	-5.6	-1.1	0	10/7/2020 7:55	88680FA6E68F	
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>TARGET CONCENTRATION (ppmv)</b>	<b>INITIAL CONCENTRATION (ppmv)</b>	<b>RESPONSE TIME (seconds)</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	469.6	0	5	10/7/2020 7:55	88680FA6E68F		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	469.6	0	6	10/7/2020 7:56	88680FA6E68F		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	469.6	0	4	10/7/2020 7:56	88680FA6E68F		
<b>MONITORING TYPE</b>	<b>OPERATOR NAME</b>	<b>INSTRUMENT ID</b>	<b>FILE SAVE TIME</b>	<b>AVG PRECISION (%)</b>	<b>AVG RESPONSE TIME (SECONDS)</b>					
VERIFICATION SUMMARY	Field Solutions, Inc.	000780DABAC4	10/7/2020 8:08	-0.3	5.3					
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>DETECTOR CONCENTRATION (ppmv)</b>	<b>DIFFERENCE (ppmv)</b>	<b>DIFFERENCE (%)</b>	<b>ZERO AIR PPM</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>	
PRECISION MEASUREMENT		CH4 (Methane)	500	498.3	-1.7	-0.3	0	10/7/2020 8:05	000780DABAC4	
PRECISION MEASUREMENT		CH4 (Methane)	500	499.2	-0.8	-0.2	0	10/7/2020 8:06	000780DABAC4	
PRECISION MEASUREMENT		CH4 (Methane)	500	497.8	-2.2	-0.4	0	10/7/2020 8:06	000780DABAC4	
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>TARGET CONCENTRATION (ppmv)</b>	<b>INITIAL CONCENTRATION (ppmv)</b>	<b>RESPONSE TIME (seconds)</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	473.5	0	5	10/7/2020 8:07	000780DABAC4		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	473.5	0	5	10/7/2020 8:07	000780DABAC4		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	473.5	0	6	10/7/2020 8:08	000780DABAC4		
<b>MONITORING TYPE</b>	<b>OPERATOR NAME</b>	<b>INSTRUMENT ID</b>	<b>FILE SAVE TIME</b>	<b>AVG PRECISION (%)</b>	<b>AVG RESPONSE TIME (SECONDS)</b>					
VERIFICATION SUMMARY	Field Solutions, Inc.	88680FA6E68F	10/8/2020 8:14	-0.9	5.3					
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>DETECTOR CONCENTRATION (ppmv)</b>	<b>DIFFERENCE (ppmv)</b>	<b>DIFFERENCE (%)</b>	<b>ZERO AIR PPM</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>	
PRECISION MEASUREMENT		CH4 (Methane)	500	495.8	-4.2	-0.8	0	10/8/2020 8:13	88680FA6E68F	
PRECISION MEASUREMENT		CH4 (Methane)	500	494.5	-5.5	-1.1	0	10/8/2020 8:13	88680FA6E68F	
PRECISION MEASUREMENT		CH4 (Methane)	500	495.7	-4.3	-0.9	0	10/8/2020 8:13	88680FA6E68F	
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>TARGET CONCENTRATION (ppmv)</b>	<b>INITIAL CONCENTRATION (ppmv)</b>	<b>RESPONSE TIME (seconds)</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.6	0	6	10/8/2020 8:14	88680FA6E68F		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.6	0	5	10/8/2020 8:14	88680FA6E68F		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	470.6	0	5	10/8/2020 8:14	88680FA6E68F		
<b>MONITORING TYPE</b>	<b>OPERATOR NAME</b>	<b>INSTRUMENT ID</b>	<b>FILE SAVE TIME</b>	<b>AVG PRECISION (%)</b>	<b>AVG RESPONSE TIME (SECONDS)</b>					
VERIFICATION SUMMARY	Field Solutions, Inc.	88680FA6E6F6	10/13/2020 8:00	-2	5.3					
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>DETECTOR CONCENTRATION (ppmv)</b>	<b>DIFFERENCE (ppmv)</b>	<b>DIFFERENCE (%)</b>	<b>ZERO AIR PPM</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>	
PRECISION MEASUREMENT		CH4 (Methane)	500	491.1	-8.9	-1.8	0	10/13/2020 7:58	88680FA6E6F6	
PRECISION MEASUREMENT		CH4 (Methane)	500	487.7	-12.3	-2.5	0	10/13/2020 7:59	88680FA6E6F6	
PRECISION MEASUREMENT		CH4 (Methane)	500	490.9	-9.1	-1.8	0	10/13/2020 7:59	88680FA6E6F6	
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>TARGET CONCENTRATION (ppmv)</b>	<b>INITIAL CONCENTRATION (ppmv)</b>	<b>RESPONSE TIME (seconds)</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	465.4	0	6	10/13/2020 8:00	88680FA6E6F6		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	465.4	0	6	10/13/2020 8:00	88680FA6E6F6		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	465.4	0	4	10/13/2020 8:00	88680FA6E6F6		
<b>MONITORING TYPE</b>	<b>OPERATOR NAME</b>	<b>INSTRUMENT ID</b>	<b>FILE SAVE TIME</b>	<b>AVG PRECISION (%)</b>	<b>AVG RESPONSE TIME (SECONDS)</b>					
VERIFICATION SUMMARY	Field Solutions, Inc.	88680FA6E6F6	10/30/2020 7:28	-1.7	6.7					
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>DETECTOR CONCENTRATION (ppmv)</b>	<b>DIFFERENCE (ppmv)</b>	<b>DIFFERENCE (%)</b>	<b>ZERO AIR PPM</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>	
PRECISION MEASUREMENT		CH4 (Methane)	500	494.6	-5.4	-1.1	0	10/30/2020 7:26	88680FA6E6F6	
PRECISION MEASUREMENT		CH4 (Methane)	500	492.4	-7.6	-1.5	0	10/30/2020 7:27	88680FA6E6F6	
PRECISION MEASUREMENT		CH4 (Methane)	500	487.8	-12.2	-2.4	0	10/30/2020 7:27	88680FA6E6F6	
<b>MONITORING TYPE</b>	<b>CAL GAS SERIAL NUMBER</b>	<b>CAL GAS TYPE</b>	<b>CAL GAS CONCENTRATION (ppmv)</b>	<b>TARGET CONCENTRATION (ppmv)</b>	<b>INITIAL CONCENTRATION (ppmv)</b>	<b>RESPONSE TIME (seconds)</b>	<b>TIMESTAMP</b>	<b>INSTRUMENT ID</b>		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	467	0	7	10/30/2020 7:27	88680FA6E6F6		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	467	0	8	10/30/2020 7:28	88680FA6E6F6		
RESPONSE TIME MEASUREMENT		CH4 (Methane)	500	467	0	5	10/30/2020 7:28	88680FA6E6F6		

# APPENDIX E

## Weather Data

Date/Time	Temperature (°F)	Average Wind Speed (mph)	Wind Direction	Sky Condition	Precipitation
10/5/2020 8:38	57	2	South-West	Clear	None
10/5/2020 9:17	67	2	North-West	Clear	None
10/6/2020 8:27	63	2	West	Clear	None
10/6/2020 8:38	63	2	West	Clear	None
10/6/2020 8:38	63	2	West	Clear	None
10/6/2020 9:14	63	2	West	Clear	None
10/7/2020 8:13	55	3	North-West	Clear	None
10/7/2020 8:14	55	3	North-West	Clear	None
10/7/2020 8:14	56	3	South-West	Partly Cloudy	None
10/8/2020 8:22	55	2	South-West	Clear	None
10/13/2020 8:15	65	2	South-East	Clear	None
10/30/20 7:44	46	2	South-West	Clear	None

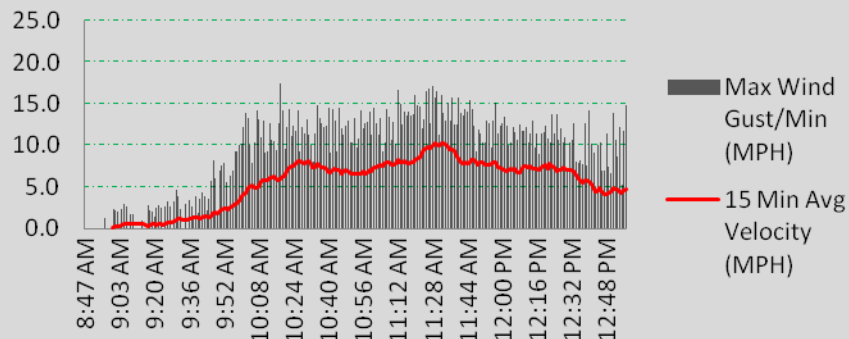
Field Solutions, Inc. portable wind meter

# APPENDIX F

## Wind Speed Data

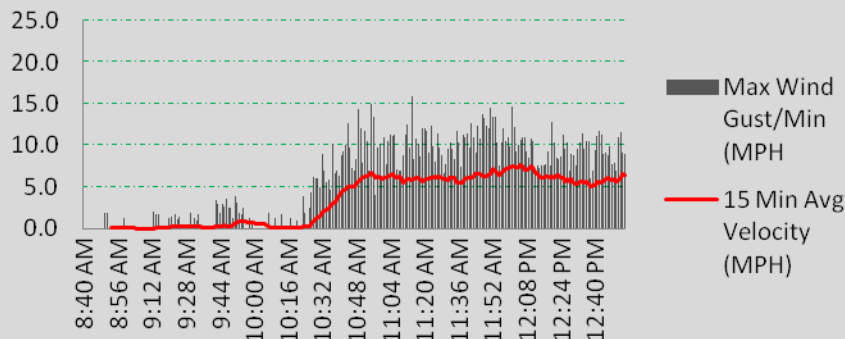
# Wind Log - Vasco Road Landfill

October 5, 2020



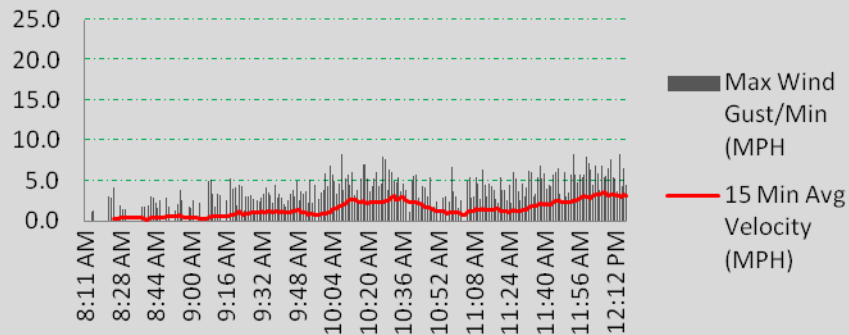
# Wind Log - Vasco Road Landfill

October 6, 2020



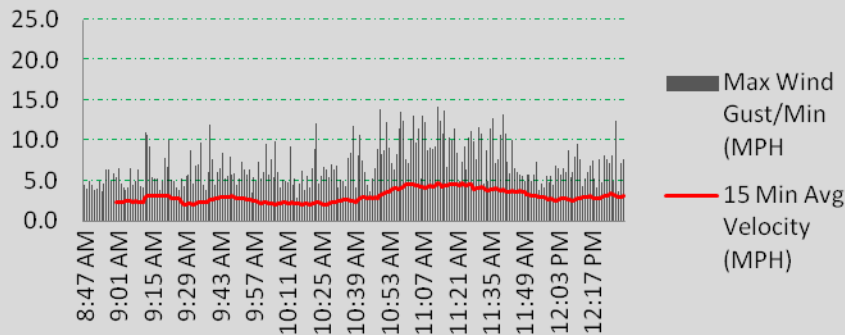
# Wind Log - Vasco Road Landfill

October 7, 2020



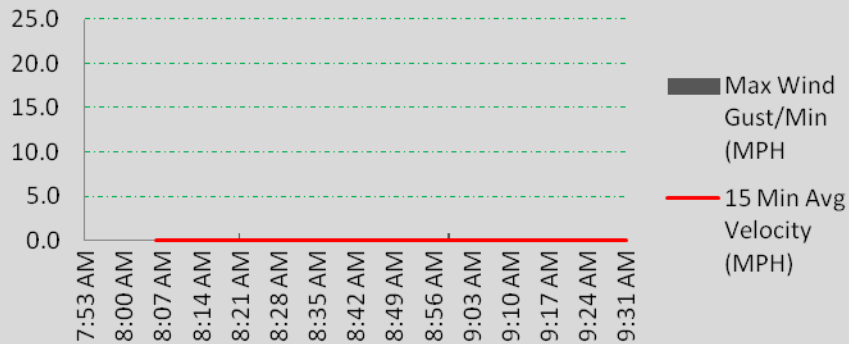
# Wind Log - Vasco Road Landfill

October 8, 2020



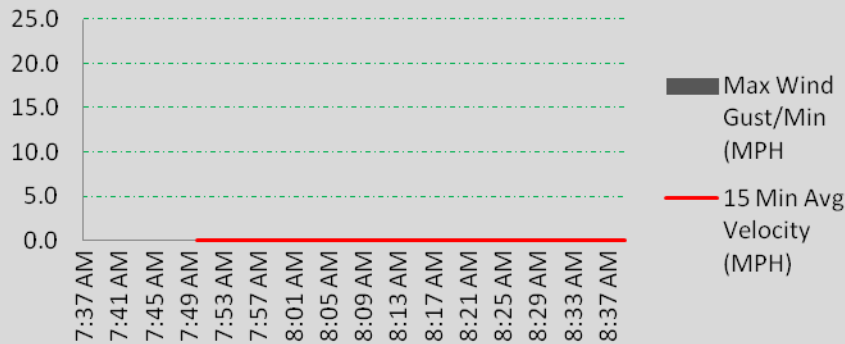
# Wind Log - Vasco Road Landfill

October 13, 2020



# Wind Log - Vasco Road Landfill

October 30, 2020





## Appendix F – Title V Semi-Annual Report

# VASCO ROAD LANDIFLL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>SITE:</b> VASCO ROAD LANDFILL	<b>FACILITY ID#:</b> A5095
<b>REPORTING PERIOD:</b> <i>from</i> 08/01/2020 <i>through</i> 01/31/2021	

### CERTIFICATION:

I declare, under penalty of perjury under the laws of the state of California, that, based on information and belief formed after reasonable inquiry, all information provided in this reporting package is true, accurate, and addresses all deviations during the reporting period:

Matthew D Ketchem  
Signature of Responsible Official

2-25-2021  
Date

Matt Ketchem  
Name of Responsible Official (please print)

General Manager  
Title of Responsible Official (please print)

### **Mail to:**

*Director of Compliance and Enforcement  
BAAQMD  
375 Beale Street, Suite 600  
San Francisco, CA 94105  
Attn: Title V reports*

# VASCO ROAD LANDIFLL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>SITE:</b> VASCO ROAD LANDFILL	<b>FACILITY ID#:</b> A5095
<b>REPORTING PERIOD:</b> <i>from</i> 08/01/2020 <i>through</i> 01/31/2021	

### List of Permitted Sources and Abatement Device

Permit Unit Number	Equipment Description
S-#	Description
S-1	Vasco Road Landfill – Waste Decomposition Process; Equipped with Gas Collection System; Abated by A-4 Landfill Gas Flare
S-12	Vasco Road Landfill – Waste and Cover Material Dumping
S-203	Vasco Road Landfill – Excavating, Bulldozing and Compacting Activities
S-7	Non-retail Gasoline Dispensing Facility
S-14	Green Waste Processing Operation; A-14 Water Sprayer
S-15	Wood Waste Processing Operation; A-15 Water Sprayer
A-4	Landfill Gas Flare

**Notes:**

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Collection System Installation Dates	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition # 818, Parts 22b-c and 22e-g	Records	Periodic / On event basis	BAAQMD 8-34-304.1	For Inactive/Closed Areas: collection system components must be installed and operating by 2 years + 60 days after initial waste placement	Continuous	N/A
Collection System Installation Dates	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition # 818, Parts 22a-c and 22e-g	Records	Periodic / On event basis	BAAQMD 8-34-304.2	For Active Areas: Collection system components must be installed and operating by 5 years + 60 days after initial waste placement	Continuous	N/A
Collection System Installation Dates	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition # 818, Parts 22a-c and 22e-g	Records	Periodic / On event basis	BAAQMD 8-34-304.3	For Any Uncontrolled Areas or Cells: collection system components must be installed and operating within 60 days after the uncontrolled area or cell accumulates 1,000,000 tons of decomposable waste	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Gas Flow	BAAQMD 8-34-501.10	Gas Flow Meter and Recorder (every 15 minutes)	Continuous	BAAQMD 8-34-301 and 301.1	Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	Intermittent	On October 25, 2020 at approximately 20:18, the Vasco GCCS was shut down due to a preventative power outage mandated by Pacific Gas and Electric (PG&E). On November 4, 2020, a Combined 10/30-Day Title V Report was submitted to the BAAQMD for RCA IDs 07W26 and 07W27. On November 4, 2020, a Combined 10/30-Day Title V Report was submitted to the BAAQMD. Refer to the Combined 10/30-Day Title V Report for additional information, including corrective actions taken.

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Gas Flow	BAAQMD 8-34-404, 8-34-501.1, 8-34-501.2, 8-34-501.5, 8-34-501.10, 8-34-508, and BAAQMD Condition # 818, Part 22g	Records of Landfill Gas Flow Rates, Collection and Control Systems Downtime, and Collection System Components	Periodic / Daily	BAAQMD Condition # 818, Parts 1-3	Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system; Except That Flare A-4 May Operate Less Than Continuously If: LFG Flow to Energy Plant is > 1200 scfm AND Remaining LFG Flow Available for A-4 is < 800 scfm (< 24 MM BTU/hour)	Continuous	N/A
Collection and Control Systems Shutdown Time	BAAQMD 8-34-501.1	Operating Records	Periodic / Daily	BAAQMD 8-34-113.2	≤ 240 hours per year and ≤ 5 consecutive days	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Periods of Inoperation for Parametric Monitors	BAAQMD 1-523.4	Operating Records for All Parametric Monitors	Periodic / Daily	BAAQMD 1-523.2	≤ 15 consecutive days per incident and ≤ 30 calendar days per 12-month period	Continuous	N/A
Continuous Monitors	40 CFR 60.7(b)	Operating Records for All Continuous Monitors	Periodic / Daily	40 CFR 60.13(e)	Requires Continuous Operation except for breakdowns, repairs, calibration, and required span adjustments	Continuous	N/A
Wellhead Pressure	BAAQMD 8-34-414, 501.9 and 505.1	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.1	< 0 psig	Continuous	N/A
Temperature of Gas at Wellhead	BAAQMD 8-34-414, 501.9 and 505.2	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.2	< 55 °C (< 131 °F), except for components identified in Condition # 818, Part 3b(i)	Continuous	N/A
Temperature of Gas at Specified Well-heads	BAAQMD 8-34-414, 501.9 and 505.2	Monthly Inspection and Records	Periodic / Monthly	BAAQMD Condition # 818, Part 3b(i)	< 140 °F	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Gas Concentrations in LFG at Wellhead	BAAQMD 8-34-414, 501.9 and 505.3 or 505.4	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.3 or 305.4	N <sub>2</sub> < 20% (by volume, dry basis) <b>OR</b> O <sub>2</sub> < 5% (by volume, dry basis), except for components identified in Condition # 818, Part 3b(ii)	Continuous	N/A
Gas Concentrations in LFG at Header	BAAQMD 8-34-414 and 8-34-501.4 and BAAQMD Condition # 818, Part 3b(ii)	Monthly Inspection and Records	Periodic / Monthly	BAAQMD Condition # 818, Part 3b(ii)	O <sub>2</sub> < 5% (by volume, dry basis) and CH <sub>4</sub> > 35% (by volume, dry basis)	Continuous	N/A
Well Shutdown Limits	BAAQMD 8-34-116.5 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-116.2	< 5 wells at a time or < 10% of total collection system, whichever is less	Continuous	N/A
Well Shutdown Limits	BAAQMD 8-34-116.5 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-116.3	< 24 hours per well	Continuous	N/A



# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Well Shutdown Limits	BAAQMD 8-34-117.6 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-117.4	< 5 wells at a time or < 10% of total collection system, whichever is less	Continuous	N/A
Well Shutdown Limits	BAAQMD 8-34-117.6 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-117.5	< 24 hours per well	Continuous	N/A
TOC (Total Organic Compounds Plus Methane)	BAAQMD 8-34-501.6 and 503 and BAAQMD Condition # 818, Part 3b(iii)	Quarterly Inspection of collection and control system components with OVA and Records	Periodic / Quarterly	BAAQMD 8-34-301.2	Component Leak Limit: < 1000 ppmv as methane	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
TOC	BAAQMD 8-34-415, 416, 501.6, 506 and 510 and BAAQMD Condition # 818, Part 3b(iii)	Monthly Visual Inspection of Cover, Quarterly Inspection with OVA of Surface, Various Re-inspection Times for Leaking Areas, and Records	Periodic / Monthly, Quarterly, and on an Event Basis	TOC BAAQMD 8-34-303	Surface Leak Limit: < 500 ppmv as methane at 2 inches above surface	Continuous	N/A
Non-Methane Organic Compounds (NMOC)	BAAQMD 8-34-412 and 8-34-501.4 and BAAQMD Condition # 818, Part 20	Annual Source Tests and Records	Periodic / Annual	BAAQMD 8-34-301.3	NMOC Destruction Efficiency: > 98% removal by weight OR NMOC Outlet Concentration: < 30 ppmv, dry basis @ 3% O <sub>2</sub> , expressed as methane (applies to flare only)	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Temperature of Combustion Zone (CT)	BAAQMD 8-34-501.3, and 507, and BAAQMD Condition # 818, Part 4	Temperature Sensor and Recorder (continuous)	Continuous	BAAQMD Condition # 818, Part 5	Flare CT > 1402 °F, averaged over any 3-hour period	Continuous	N/A
Opacity	BAAQMD Condition # 818, Part 22d	Records of all site watering and road cleaning events	Periodic / On event basis, Monthly	BAAQMD 6-1-301 and SIP 6-301	Ringelmann No. 1 for ≤ 3 minutes/hr (applies to active landfill operations)	Continuous	N/A
Opacity	None	N/A	None	BAAQMD 6-1-301 and SIP 6-301	Ringelmann No. 1 for < 3 minutes/hr (applies to flare)	Continuous	N/A
TSP	None	N/A	None	BAAQMD 6-1-310.1 and SIP 6-310	< 0.15 grains/dscf (applies to flare only)	Continuous	N/A
NO <sub>x</sub>	BAAQMD Condition # 818, Part 20	Annual Source Test	Periodic / Annual	BAAQMD Condition # 818, Part 8	Flare Outlet Concentration: < 11 ppmv of NO <sub>x</sub> @ 15% O <sub>2</sub> , dry basis OR Flare Outlet Emission Rate: < 0.049 pounds of NO <sub>2</sub> per MM BTU	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
CO	BAAQMD Condition # 818, Part 20	Annual Source Test	Periodic / Annual	BAAQMD Condition # 818, Part 10	Flare Outlet Concentration: < 73 ppmv of CO @ 15% O2, dry basis OR Flare Outlet Emission Rate: < 0.19 pounds of CO per MM BTU	Continuous	N/A
SO <sub>2</sub>	None	N/A	None	BAAQMD 9-1-301	Property Line Ground Level Limits: < 0.5 ppm for 3 minutes and < 0.25 ppm for 60 min. and <0.05 ppm for 24 hours (applies to flare only)	Continuous	N/A
SO <sub>2</sub>	None	N/A	None	BAAQMD Regulation 9-1-302	≤ 300 ppm, (dry basis) (applies to flare only)	Continuous	N/A
Sulfur Content in Landfill Gas	BAAQMD Condition # 818, Parts 12, 21	Sulfur analysis of landfill gas	Periodic / Quarterly	BAAQMD Condition # 818, Part 12	Annual Average TRS < 320 ppmv, expressed as H <sub>2</sub> S (dry basis)	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
H <sub>2</sub> S	None	N/A	None	BAAQMD 9-2-301	Property Line Ground Level Limits: < 0.06 ppm, averaged over 3 minutes and < 0.03 ppm, averaged over 60 minutes	Continuous	N/A
Heat Input	BAAQMD 8-34-501.10 and 508 and BAAQMD Condition # 818, Parts 3b(ii), 13 and 22g	Gas Flow Rate Meter, LFG Methane Analyses, Calculations and Records	Continuous, Periodic / Daily, and Periodic / Monthly	BAAQMD Condition # 818, Part 13	< 2880 MM BTU per day and < 1,051,200 MM BTU per 12-month period	Continuous	N/A
Vehicle Traffic	BAAQMD Condition # 818, Part 22a	Records	Periodic / Daily	BAAQMD Condition # 818, Part 14a	< 625 vehicles per day	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Amount of Material Accepted	BAAQMD Condition # 818, Part 22a	Records	Periodic / Daily	BAAQMD Condition # 818, Part 14	< 2518 tons per day of solid waste and < 23,800,000 tons (cumulative) of decomposable materials and < 31,650,000 yd <sup>3</sup> (cumulative) amount of all wastes and cover materials	Continuous	N/A
Total Carbon Emissions	BAAQMD Condition # 818, Part 18	Records	Periodic / Daily	BAAQMD 8-2-301	< 15 pounds per day Or < 300 ppmv, dry basis (applies only to aeration of or use as cover soil of soil containing < 50 ppmw of volatile organic compounds)	Continuous	N/A
Organic Content of Soil	BAAQMD Condition # 818, Part 18	Records	Periodic / Daily	BAAQMD Condition # 818, Part 15	< 50 ppmw of VOC in soil or < 50 ppmv of VOC, expressed as C1, measured 3 inches above soil	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Amount of VOC Laden Soil Accepted	BAAQMD Condition # 818, Part 18	Records	Periodic / On event basis	BAAQMD Condition # 818, Part 16a-b	< 10,000 tons per consecutive 12-month period for soil with high chlorinated compound concentration and < 170,000 tons per consecutive 12-month period for other VOC laden soil	Continuous	N/A
TAC Concentration Limits for VOC-laden Soil	BAAQMD Condition # 818, Part 18	Records	Periodic / On event basis	BAAQMD Condition # 818, Part 16a-b	Compound < ppmw Benzene 0.50 Carbon Tetrachloride 0.50 Chloroform 6.00 1,4 Dichlorobenzene 7.50 1,2 Dichloroethane 0.50 Tetrachloroethylene 0.70 Trichloroethylene 0.50 Vinyl Chloride 0.20	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Amount of Metal Laden Soil Accepted	BAAQMD Condition # 818, Part 18	Records	Periodic / On event basis	BAAQMD Condition # 818, Part 16	< 180,000 tons per consecutive 12-month period	Continuous	N/A
TAC Concentration Limits for Metal-Laden Soil	BAAQMD Condition # 818, Part 18	Records	Periodic / On event basis	BAAQMD Condition # 818, Part 16	Arsenic < 130 ppmw Beryllium < 75 ppmw Cadmium < 100 ppmw Chromium VI < 7 ppmw Copper < 2500 ppmw Lead < 1000 ppmw Mercury < 20 ppmw Nickel < 2000 ppmw Selenium < 100ppmw Zinc < 5000 ppmw	Continuous	N/A
Startup Shutdown or Malfunction Procedures	40 CFR 63.1980(a-b)	Records (all occurrences, duration of each, corrective actions)	Periodic / On event basis	40 CFR 63.6(e)	Minimize Emissions by Implementing SSM Plan	Continuous	N/A



# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Trackout onto Paved Roadways	BAAQMD 6-6-501	Records	Periodic / Daily	BAAQMD 6-6-301	Trackout causing visible emissions: < 25 linear feet for no more than 4 hours; and Trackout remaining on adjacent paved public roadway or paved shoulder: < 1 quart at end of each workday	Continuous	N/A
Visible Emissions from Cleaning Trackout	BAAQMD 6-6-501	Records	Periodic / Daily	BAAQMD 6-6-302	< Ringelmann No. 1 Limitation for no more than 3 minutes in any 60-minute period	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-7 NON-RETAIL GASOLINE DISPENSING FACILITY #9551	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Gasoline Throughput	BAAQMD 8-7-503.1	Records	Periodic / Annual	BAAQMD Condition # 7523	< 400,000 gallons per 12-month period	Continuous	N/A
Exempt Throughput	BAAQMD 8-7-501 and 8-7-503.2	Records	Periodic / On event basis	BAAQMD 6-1-310	< 1000 gallons per facility for tank integrity leak checking	Continuous	N/A
Organic Compounds	CARB EO G-70-116-F, paragraph 19 and BAAQMD 8-7-301.13 and 8-7-407	Annual Check for Vapor Tightness and Proper Operation of Vapor Recovery System	Periodic / Annual	BAAQMD 8-7-301.6	All Phase I Equipment (except components with allowable leak rates) shall be leak free (<3 drops/minute) and vapor tight	Continuous	N/A
Organic Compounds	CARB EO G-70-116-F, paragraph 19 and BAAQMD 8-7-301.13 and 8-7-407	Annual Check for Vapor Tightness and Proper Operation of Vapor Recovery System	Periodic / Annual	BAAQMD 8-7-302.5	All Phase II Equipment (except components with allowable leak rates or at the nozzle/fill-pipe interface) Shall Be: leak free (<3 drops/minute) and vapor tight	Continuous	N/A
Organic Compounds	SIP 8-5-403 and 8-5-503	Annual Inspection with Portable Hydro-carbon Detector	Periodic / On event basis	SIP 8-5-303.2	Tank Pressure Vacuum Valve Shall Be: Gas Tight or < 500 ppmv (expressed as	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-7 NON-RETAIL GASOLINE DISPENSING FACILITY #9551	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
					methane) above background for PRVs (as defined in SIP 8-5-206)		
Organic Compounds	CARB EO G-70-116-F, paragraph 19 and BAAQMD 8-7-301.13 and 8-7-407	Annual Check for Vapor Tightness and Proper Operation of Vapor Recovery System	Periodic / Annual	CARB EO G-70-116-F, paragraph 10	Any Emergency Vent or Manway Shall Be: leak free	Continuous	N/A
Defective Component Repair/ Replacement Time Limit	BAAQMD 8-7-503.2	Records	Periodic / On event basis	BAAQMD 8-7-302.4	≤ 7 days	Continuous	N/A
Liquid Removal Rate	CARB EO G-70-116-F	CARB Certification Procedures	Periodic / On event basis	BAAQMD 8-7-302.8	> 5 ml per gallon dispensed, when dispensing rate > 5 gallons/minute	Continuous	N/A
Liquid Retain from Nozzles	CARB EO G-70-116-F	CARB Certification Procedures	Periodic / On event basis	BAAQMD 8-7-302.12	≤ 100 ml per 1000 gallons dispensed	Continuous	N/A
Nozzle Spitting	CARB EO G-70-116-F	CARB Certification Procedures	Periodic / On event basis	BAAQMD 8-7-302.13	≤ 1.0 ml per nozzle per test	Continuous	N/A
Pressure-Vacuum Valve Settings	CARB EO G-70-116-F	CARB Certification Procedures	Periodic / On event basis	BAAQMD 8-7-316 and CARB EO G-70-116-F, paragraph 14	Pressure Setting: > 2.5 inches of water, gauge	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-7 NON-RETAIL GASOLINE DISPENSING FACILITY #9551	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Pressure-Vacuum Valve Settings	SIP 8-5-403 and CARB EO G-70-116-	Semi-Annual Inspection and CARB Certification Procedures	Periodic / On event basis	SIP 8-5-303.1	Pressure Setting: > 10% of maximum working pressure or > 0.5 psig	Continuous	N/A
Disconnection Liquid Leaks	CARB EO G-70-116-F, paragraph 19 and BAAQMD 8-7-301.13 and 8-7-407	Annual Check for Vapor Tightness and Proper Operation of Vapor Recovery System	Periodic / Annual	CARB EO G-70-116-F, paragraph 12	≤ 10 ml per disconnect, averaged over 3 disconnect operations	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-14 GREENWASTE PROCESSING OPERATION, A-14 WATER SPRAYER	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Waste Processing Limit	BAAQMD Condition # 25515 Part 1	Records	Periodic / Annual	BAAQMD Condition # 25515 Part 1	≤ 16,000 tons of green waste per 12-month period	Continuous	N/A
Opacity	BAAQMD Condition # 25515, Part 2	Observation of Source in Operation	Periodic / On event basis	BAAQMD 6-1-301 and SIP 6-301	< Ringelmann 1.0 for 3 minutes in any hour	Continuous	N/A
TSP	None	N/A	None	BAAQMD 6-1-311.1 and SIP 6-311	$E = 4.10(P)^{0.67}$ where: E = Allowable Emission Rate (lb/hr); and P = Process Weight Rate (lb/hr) Maximum Allowable Emission Rate = 40 lb/hr For P >55, 116 lb/hr	Continuous	N/A
Total Carbon Emissions	None	N/A	None	BAAQMD 8-2-301	≤ 15 pounds/day or ≤ 300 ppm, dry basis and vapor tight	Continuous	N/A

# VASCO ROAD LANDFILL

## TITLE V SEMI-ANNUAL MONITORING REPORT

<b>Site:</b> Vasco Road Landfill	<b>Facility ID#:</b> A5095
<b>Permitted Unit:</b> S-15 WOODWASTE PROCESSING OPERATION, A-15 WATER SPRAYER	<b>Reporting Period:</b> from 08/01/2020 through 01/31/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Waste Processing Limit	BAAQMD Condition # 25516 Part 1	Records	Periodic / Annual	BAAQMD Condition # 25516 Part 1	≤ 5,000 tons of wood waste per 12-month period	Continuous	N/A
Opacity	BAAQMD Condition # 25516, Part 2	Observation of Source in Operation	Periodic / On event basis	BAAQMD 6-1-301 and SIP 6-301	< Ringelmann 1.0 for 3 minutes in any hour	Continuous	N/A
TSP	None	N/A	None	BAAQMD 6-1-311.1 and SIP 6-311	$E = 4.10(P)^{0.67}$ where: E = Allowable Emission Rate (lb/hr); and P = Process Weight Rate (lb/hr) Maximum Allowable Emission Rate = 40 lb/hr For P >55,116 lb/hr	Continuous	N/A

## Appendix G – Title V Annual Compliance Certification

# VASCO ROAD LANDIFLL

## TITLE V ANNUAL CERTIFICATION

<b>SITE:</b> VASCO ROAD LANDFILL	<b>FACILITY ID#:</b> A5095
<b>REPORTING PERIOD:</b> <i>from</i> 02/01/2020 <i>through</i> 01/31/2021	

### CERTIFICATION:

I declare, under penalty of perjury under the laws of the state of California, that, based on information and belief formed after reasonable inquiry, all information provided in this reporting package is true, accurate, and addresses all deviations during the reporting period:

*Matthew D Ketchem*

Signature of Responsible Official

2-25-2021

Date

                    Matt Ketchem                    

Name of Responsible Official (please print)

                    General Manager                    

Title of Responsible Official (please print)

### **Mail to:**

*Director of Compliance and Enforcement  
BAAQMD  
375 Beale Street, Suite 600  
San Francisco, CA 94105  
Attn: Title V reports*



## Compliance Certification Report

Site #: A5095

Address: 4001 North Vasco Road

Source #: Facility

Site Name: Vasco Road Landfill

City: Livermore, CA

Source Name: Facility

Reporting Period: 02/1/2020 to 01/31/2021

Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Notes
BAAQMD Regulation 1	General Provisions and Definitions (5/4/11)	N	C	
SIP Regulation 1	General Provisions and Definitions (6/28/99)	Y	C	
BAAQMD Regulation 2, Rule 1	Permits – General Requirements (12/6/17)	N	C	
BAAQMD 2-1-429	Permits – General Requirements: Federal Emissions Statement (12/21/04)	N	C	
SIP Regulation 2, Rule 1	Permits - General Requirements (8/1/16)	Y	C	
SIP Regulation 2-1-429	Permits – General Requirements: Federal Emissions Statement (4/3/95)	Y	C	
BAAQMD Regulation 2, Rule 5	Permits – New Source Review of Toxic Air Contaminants (12/7/16)	N	C	
BAAQMD Regulation 4	Air Pollution Episode Plan (3/20/91)	N	C	
SIP Regulation 4	Air Pollution Episode Plan (8/6/90)	Y	C	
BAAQMD Regulation 5	Open Burning (6/19/13)	N	C	
SIP Regulation 5	Open Burning (9/4/98)	Y	C	
BAAQMD Regulation 6, Rule 1	Particulate Matter – General Requirements (8/1/18)	N	C	
SIP Regulation 6	Particulate Matter and Visible Emissions (9/4/98)	Y	C	
BAAQMD Regulation 6, Rule 6	Particulate Matter – Prohibition of Trackout	N		
BAAQMD Regulation 7	Odorous Substances (3/17/82)	N	C	
BAAQMD Regulation 8, Rule 1	Organic Compounds - General Provisions (6/15/94)	Y	C	
BAAQMD Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (7/20/05)	N	C	
SIP Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (3/22/95)	Y	C	
BAAQMD Regulation 8, Rule 3	Organic Compounds - Architectural Coatings (7/1/09)	N	C	
SIP Regulation 8, Rule 3	Organic Compounds - Architectural Coatings (1/2/04)	Y	C	
BAAQMD Regulation 8, Rule 4	Organic Compounds - General Solvent and Surface Coating Operations (10/16/02)	Y	C	
BAAQMD Regulation 8, Rule 15	Organic Compounds – Emulsified and Liquid Asphalts (6/1/94)	Y	C	
BAAQMD Regulation 8, Rule 16	Organic Compounds - Solvent Cleaning Operations (10/16/02)	Y	C	
BAAQMD Regulation 8, Rule 40	Organic Compounds – Aeration of Contaminated Soil and Removal of Underground Storage Tanks (6/15/05)	N	C	
BAAQMD Regulation 8-40-116	Exemption, Small Volume	Y	C	

## Compliance Certification Report

Site #: A5095

Address: 4001 North Vasco Road

Source #: Facility

Site Name: Vasco Road Landfill

City: Livermore, CA

Source Name: Facility

Reporting Period: 02/1/2020 to 01/31/2021

Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Notes
BAAQMD Regulation 8-40-117	Exemption, Accidental Spills	Y	C	
SIP Regulation 8, Rule 40	Organic Compounds – Aeration of Contaminated Soil and Removal of Underground Storage Tanks (4/19/01)	Y	C	
BAAQMD Regulation 8, Rule 47	Organic Compounds – Air Stripping and Soil Vapor Extraction Operations (6/15/05)	N	C	
SIP Regulation 8, Rule 47	Organic Compounds – Air Stripping and Soil Vapor Extraction Operations (4/26/95)	Y	C	
BAAQMD Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (12/20/95)	N	C	
SIP Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (3/22/95)	Y	C	
BAAQMD Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (7/17/02)	N	C	
SIP Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (2/26/02)	Y	C	
BAAQMD Regulation 9, Rule 1	Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)	N	C	
SIP Regulation 9, Rule 1	Inorganic Gaseous Pollutants – Sulfur Dioxide (6/8/99)	Y	C	
BAAQMD Regulation 9, Rule 2	Inorganic Gaseous Pollutants – Hydrogen Sulfide (10/6/99)	N	C	
BAAQMD Regulation 11, Rule 1	Hazardous Pollutants – Lead (3/17/82)	N	C	
SIP Regulation 11, Rule 1	Hazardous Pollutants – Lead (9/2/81)	Y	C	
BAAQMD Regulation 11, Rule 2	Hazardous Pollutants - Asbestos Demolition, Renovation and Manufacturing (10/7/98)	N	C	
BAAQMD Regulation 11, Rule 14	Hazardous Pollutants - Asbestos Containing Serpentine (7/17/91)	N	C	
BAAQMD Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (7/11/90)	N	C	
SIP Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (9/2/81)	Y	C	
California Health and Safety Code Section 41750 et seq.	Portable Equipment	N	C	
California Health and Safety Code Section 44300 et seq.	Air Toxics “Hot Spots” Information and Assessment Act of 1987	N	C	
California Health and Safety Code Title 17, 93105	Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying and Surface Mining Operations (7/26/01)	N	C	
California Health and Safety Code Title 17, 93106	Asbestos Airborne Toxic Control Measure for Asbestos Containing Serpentine (7/20/00)	N	C	

## Compliance Certification Report

**Site #:** A5095

**Address:** 4001 North Vasco Road

**Source #:** Facility

**Site Name:** Vasco Road Landfill

**City:** Livermore, CA

**Source Name:** Facility

**Reporting Period:** 02/1/2020 to 01/31/2021

**Zip Code:** 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Notes
California Health and Safety Code Title 17, 93116	Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater (2/19/11)	N	C	
40 CFR Part 61, Subpart A	National Emission Standards for Hazardous Air Pollutants – General Provisions (9/13/10)	Y	C	
40 CFR Part 61, Subpart M	National Emission Standards for Hazardous Air Pollutants – National Emission Standard for Asbestos (7/20/04)	Y	C	

# Compliance Certification Report

Site #: A5095

Address: 4001 North Vasco Road

Source #: S-1, S-12, S-13

Site Name: Vasco Road Landfill

City: Livermore, CA

Source Name: MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

Reporting Period: 02/1/2020 to 01/31/2021

Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
<b>BAAQMD Regulation 1</b>	<b>General Provisions and Definitions (5/4/11)</b>			
1-523	Parametric Monitoring and Recordkeeping Procedures	N	C	
1-523.1	Parametric monitor periods of inoperation	Y	C	
1-523.2	Limit on duration of inoperation	Y	C	
1-523.3	Reporting requirement for violations of any applicable limits	N	C	
1-523.4	Records of inoperation, tests, calibrations, adjustments, & maintenance	Y	C	
1-523.5	Maintenance and calibration	N	C	
<b>SIP Regulation 1</b>	<b>General Provisions and Definitions (6/28/99)</b>			
1-523	Parametric Monitoring and Recordkeeping Procedures	Y	C	
1-523.3	Reports of Violations	Y	C	
<b>BAAQMD Regulation 6, Rule 1</b>	<b>Particulate Matter – General Requirements (8/1/18)</b>			
6-1-301	Ringelmann No. 1 Limitation	N	C	
6-1-305	Visible Particles	N	C	
6-1-310	Particle Weight Limitation (applies to Flares only)	N	C	
6-1-401	Appearance of Emissions	N	C	
<b>SIP Regulation 6</b>	<b>Particulate Matter and Visible Emissions (9/4/98)</b>			
6-301	Ringelmann No. 1 Limitation	Y	C	
6-305	Visible Particles	Y	C	
6-310	Particle Weight Limitation (applies to flare only)	Y	C	
6-401	Appearance of Emissions	Y	C	

# Compliance Certification Report

Site #: A5095

Address: 4001 North Vasco Road

Source #: S-1, S-12, S-13

Site Name: Vasco Road Landfill

City: Livermore, CA

Source Name: MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

Reporting Period: 02/1/2020 to 01/31/2021

Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
<b>BAAQMD Regulation 8, Rule 2</b>	<b>Organic Compounds – Miscellaneous Operations (7/20/05)</b>			
8-2-301	Miscellaneous Operations (applies to VOC-laden soil handling and disposal activities only)	Y	C	
<b>BAAQMD Regulation 8, Rule 34</b>	<b>Organic Compounds – Solid Waste Disposal Sites (6/15/05)</b>			
8-34-113	Limited Exemption, Inspection and Maintenance	Y	C	
8-34-113.1	Emission Minimization Requirement	Y	C	
8-34-113.2	Shutdown Time Limitation	Y	C	
8-34-113.3	Recordkeeping Requirement	Y	C	
8-34-116	Limited Exemption, Well Raising	Y	C	
8-34-116.1	New Fill	Y	C	
8-34-116.2	Limits on Number of Wells Shutdown	Y	C	
8-34-116.3	Shutdown Duration Limit	Y	C	
8-34-116.4	Capping Well Extensions	Y	C	
8-34-116.5	Well Disconnection Records	Y	C	
8-34-117	Limited Exemption, Gas Collection System Components	Y	C	
8-34-117.1	Necessity of Existing Component Repairs/Adjustments	Y	C	
8-34-117.2	New Components are Described in Collection and Control System Design Plan	Y	C	
8-34-117.3	Meets Section 8-34-118 Requirements	Y	C	
8-34-117.4	Limits on Number of Wells Shutdown	Y	C	
8-34-117.5	Shutdown Duration Limit	Y	C	
8-34-117.6	Well Disconnection Records	Y	C	
8-34-118	Limited Exemption, Construction Activities	Y	C	

## Compliance Certification Report

**Site #:** A5095

**Address:** 4001 North Vasco Road

**Source #:** S-1, S-12, S-13

**Site Name:** Vasco Road Landfill

**City:** Livermore, CA

**Source Name:** MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

**Reporting Period:** 02/1/2020 to 01/31/2021

**Zip Code:** 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
8-34-118.1	Construction Plan	Y	C	
8-34-118.2	Activity is Required to Maintain Compliance with this Rule	Y	C	
8-34-118.3	Required or Approved by Other Enforcement Agencies	Y	C	
8-34-118.4	Emission Minimization Requirement	Y	C	
8-34-118.5	Excavated Refuse Requirements	Y	C	
8-34-118.6	Covering Requirements for Exposed Refuse	Y	C	
8-34-118.7	Installation Time Limit	Y	C	
8-34-118.8	Capping Required for New Components	Y	C	
8-34-118.9	Construction Activity Records	Y	C	
8-34-301	Landfill Gas Collection and Emission Control System Requirements	Y	C	

# Compliance Certification Report

**Site #:** A5095

**Address:** 4001 North Vasco Road

**Source #:** S-1, S-12, S-13

**Site Name:** Vasco Road Landfill

**City:** Livermore, CA

**Source Name:** MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

**Reporting Period:** 02/1/2020 to 01/31/2021

**Zip Code:** 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
8-34-301.1	Continuous Operation	Y	I (See Comment)	On October 25, 2020 at approximately 20:18, the Vasco GCCS was shut down due to a preventative power outage mandated by Pacific Gas and Electric (PG&E). Vasco verbally reported the breakdown to the BAAQMD via the after-hours reporting hotline on October 25, 2020 at approximately 20:51. Furthermore, an RCA form was submitted to the BAAQMD on October 26, 2020 to request breakdown relief and to report the parametric excursion. On the same day, the BAAQMD issued RCA IDs 07W26 and 07W27 for the breakdown and excursion, respectively. On November 4, 2020, a Combined 10/30-Day Title V Report was submitted to the BAAQMD. Refer to the Combined 10/30-Day Title V Report for additional information, including corrective actions taken.
8-34-301.2	Collection and Control Systems Leak Limitations	Y	C	
8-34-301.3	Limits for Enclosed Flares	Y	C	
8-34-303	Landfill Surface Requirements	Y	C	
8-34-304	Gas Collection System Installation Requirements	Y	C	
8-34-304.1	Based on Waste Age For Inactive or Closed Areas	Y	C	
8-34-304.2	Based on Waste Age For Active Areas	Y	C	
8-34-304.3	Based on Amount of Decomposable Waste Accepted	Y	C	
8-34-304.4	Based on NMOC Emission Rate	Y	C	
8-34-305	Wellhead Requirements	Y	C	

# Compliance Certification Report

**Site #:** A5095

**Address:** 4001 North Vasco Road

**Source #:** S-1, S-12, S-13

**Site Name:** Vasco Road Landfill

**City:** Livermore, CA

**Source Name:** MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

**Reporting Period:** 02/1/2020 to 01/31/2021

**Zip Code:** 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
8-34-305.1	Wellhead Vacuum Requirements	Y	C	
8-34-305.2	Wellhead Temperature Limit	Y	C	
8-34-305.3	Nitrogen Concentration Limit for Wellhead Gas or	Y	C	
8-34-305.4	Oxygen Concentration Limit for Wellhead Gas	Y	C	
8-34-405	Design Capacity Reports	Y	C	
8-34-408	Collection and Control System Design Plans	Y	C	
8-34-408.2	Sites With Existing Collection and Control Systems	Y	C	
8-34-411	Annual Report	Y	C	
8-34-412	Compliance Demonstration Tests	Y	C	
8-34-413	Performance Test Report	Y	C	
8-34-414	Repair Schedule for Wellhead Excesses	Y	C	
8-34-414.1	Records of Excesses	Y	C	
8-34-414.2	Corrective Action	Y	C	
8-34-414.3	Collection System Expansion	Y	C	
8-34-414.4	Operational Due Date for Expansion	Y	C	
8-34-415	Repair Schedule for Surface Leak Excesses	Y	C	
8-34-415.1	Records of Excesses	Y	C	
8-34-415.2	Corrective Action	Y	C	
8-34-415.3	Re-monitor Excess Location Within 10 Days	Y	C	
8-34-415.4	Re-monitor Excess Location Within 1 Month	Y	C	
8-34-415.5	If No More Excesses, No Further Re-Monitoring	Y	C	
8-34-415.6	Additional Corrective Action	Y	C	
8-34-415.7	Re-monitor Second Excess Within 10 days	Y	C	
8-34-415.8	Re-monitor Second Excess Within 1 Month	Y	C	
8-34-415.9	If No More Excesses, No Further Re-monitoring	Y	C	
8-34-415.10	Collection System Expansion for Third Excess in a Quarter	Y	C	



# Compliance Certification Report

Site #: A5095

Address: 4001 North Vasco Road

Source #: S-1, S-12, S-13

Site Name: Vasco Road Landfill

City: Livermore, CA

Source Name: MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

Reporting Period: 02/1/2020 to 01/31/2021

Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
8-34-415.11	Operational Due Date for Expansion	Y	C	
8-34-416	Cover Repairs	Y	C	
8-34-501	Operating Records	Y	C	
8-34-501.1	Collection System Downtime	Y	C	
8-34-501.2	Emission Control System Downtime	Y	C	
8-34-501.3	Continuous Temperature Records for Enclosed Combustors	Y	C	
8-34-501.4	Testing	Y	C	
8-34-501.5	Landfill Gas Flow Rate and Well Concentration Records for Components Operating Less Than Continuously	Y	C	
8-34-501.6	Leak Discovery and Repair Records	Y	C	
8-34-501.7	Waste Acceptance Records	Y	C	
8-34-501.8	Non-decomposable Waste Records	Y	C	
8-34-501.9	Wellhead Excesses and Repair Records	Y	C	
8-34-501.10	Gas Flow Rate Records for All Emission Control Systems	Y	C	
8-34-501.12	Records Retention for 5 Years	Y	C	
8-34-503	Landfill Gas Collection and Emission Control System Leak Testing	Y	C	
8-34-504	Portable Hydrocarbon Detector	Y	C	
8-34-505	Well Head Monitoring	Y	C	
8-34-506	Landfill Surface Monitoring	Y	C	
8-34-507	Continuous Temperature Monitor and Recorder (applies to flare)	Y	C	
8-34-508	Gas Flow Meter	Y	C	
8-34-510	Cover Integrity Monitoring	Y	C	
<b>BAAQMD Regulation 9, Rule 1</b>	<b>Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)</b>			
9-1-301	Limitations on Ground Level Concentrations (applies flare only)	Y	C	

# Compliance Certification Report

Site #: A5095

Address: 4001 North Vasco Road

Source #: S-1, S-12, S-13

Site Name: Vasco Road Landfill

City: Livermore, CA

Source Name: MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

Reporting Period: 02/1/2020 to 01/31/2021

Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
9-1-302	General Emission Limitations (applies to flare only)	Y	C	
<b>BAAQMD Regulation 9, Rule 2</b>	<b>Inorganic Gaseous Pollutants – Hydrogen Sulfide (10/6/99)</b>			
9-2-301	Limitations on Hydrogen Sulfide	N	C	
<b>40 CFR Part 60, Subpart A</b>	<b>Standards of Performance for New Stationary Sources – General Provisions (9/13/10)</b>			
60.4(b)	Requires Submission of Requests, Reports, Applications, and Other Correspondence to the Administrator	Y	C	
60.7	Notification and Record Keeping	Y	C	
60.8	Performance Tests	Y	C	
60.11	Compliance with Standards and Maintenance Requirements	Y	C	
60.11(a)	Compliance determined by performance tests	Y	C	
60.11(d)	Control devices operated using good air pollution control practice	Y	C	
60.12	Circumvention	Y	C	
60.13	Monitoring Requirements	Y	C	
60.13(a)	Applies to all continuous monitoring systems	Y	C	
60.13(b)	Monitors shall be installed and operational before performing performance tests	Y	C	
60.13(e)	Continuous monitors shall operate continuously	Y	C	
60.13(f)	Monitors shall be installed in proper locations	Y	C	
60.13(g)	Requires multiple monitors for multiple stacks	Y	C	
60.14	Modification	Y	C	
60.15	Reconstruction	Y	C	
60.19	General Notification and Reporting Requirements	Y	C	

# Compliance Certification Report

Site #: A5095

Address: 4001 North Vasco Road

Source #: S-1, S-12, S-13

Site Name: Vasco Road Landfill

City: Livermore, CA

Source Name: MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

Reporting Period: 02/1/2020 to 01/31/2021

Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
<b>40 CFR Part 60, Subpart Cc</b>	<b>Standards of Performance for New Stationary Sources – Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (2/24/99)</b>			
60.36c(a)	Collection and Control Systems in Compliance by 30 months after Initial NMOC Emission Rate Report Shows NMOC Emissions $\geq$ 50 MG/year	Y	C	
<b>40 CFR Part 60, Subpart Cf</b>	<b>Standards of Performance for New Stationary Sources – Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (8/29/16)</b>			
60.32f	Collection and Control Systems in Compliance by 30 months after NMOC Emission Rate Report Shows NMOC Emissions > 50 MG/year	Y	C	
<b>40 CFR Part 62, Subpart F</b>	<b>Approval and Promulgation of State Plans for Designated Facilities and Pollutants (4/20/06)</b>			
62.1100	Identification of Plan	Y	C	
62.1115	Identification of Sources – Existing Municipal Solid Waste Landfills	Y	C	
<b>40 CFR Part 63, Subpart A</b>	<b>National Emission Standards for Hazardous Air Pollutants: General Provisions (9/13/10)</b>			
63.4	Prohibited activities and circumvention	Y	C	
63.5(b)	Requirements for existing, newly constructed, and reconstructed sources	Y	C	
63.6(e)	Operation and maintenance requirements and SSM Plan	Y	C	
63.6(f)	Compliance with non-opacity emission standards	Y	C	
63.10(b)(2)(i-v)	Records for startup, shutdown, malfunction, and maintenance	Y	C	
63.10(d)(5)	Startup, Shutdown, and Malfunction (SSM) Reports	Y	C	

## Compliance Certification Report

**Site #:** A5095

**Address:** 4001 North Vasco Road

**Source #:** S-1, S-12, S-13

**Site Name:** Vasco Road Landfill

**City:** Livermore, CA

**Source Name:** MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

**Reporting Period:** 02/1/2020 to 01/31/2021

**Zip Code:** 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
<b>40 CFR Part 63, Subpart AAAA</b>	<b>National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills (4/20/06)</b>			
63.1945	When do I have to comply with this subpart?	Y	C	
63.1945(b)	Compliance date for existing affected landfills	Y	C	
63.1955	What requirements must I meet?	Y	C	
63.1955(a)	Comply with either 63.1955(a)(1) or (a)(2)	Y	C	
63.1955(a)(2)	Comply with State Plan that implements 40 CFR Part 60, Subpart Cc	Y	C	
63.1955(b)	Comply with 63.1960-63.1985, if a collection and control system is required by 40 CFR Part 60, Subpart WWW or a State Plan implementing 40 CFR Part 60, Subpart Cc	Y	C	
63.1955(c)	Comply with all approved alternatives to standards for collection and control systems plus all SSM requirements and 6 month compliance reporting requirements	Y	C	
63.1960	How is compliance determined?	Y	C	
63.1965	What is a deviation?	Y	C	
63.1975	How do I calculate the 3-hour block average used to demonstrate compliance?	Y	C	
63.1980	What records and reports must I keep and submit?	Y	C	
63.1980(a)	Comply with all record keeping and reporting requirements in 40 CFR Part 60, Subpart WWW or the State Plan implementing 40 CFR Part 60, Subpart Cc, except that the annual report required by 40 CFR 60.757(f) must be submitted every 6 months	Y	C	
63.1980(b)	Comply with all record keeping and reporting requirements in 40 CFR Part 60, Subpart A and 40 CFR Part 63, Subpart A, including SSM Plans and Reports	Y	C	

# Compliance Certification Report

Site #: A5095

Address: 4001 North Vasco Road

Source #: S-1, S-12, S-13

Site Name: Vasco Road Landfill

City: Livermore, CA

Source Name: MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

Reporting Period: 02/1/2020 to 01/31/2021

Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
<b>BAAQMD Condition #818</b>				
Part 1	Control requirements for collected landfill gas (Regulations 8-34-301 and 8-34-303)	Y	C	
Part 2	Landfill gas collection system description (Regulations 2-1-301, 8-34-301.1, 8-34-304, and 8-34-305)	Y	C	
Part 3	Landfill gas collection system operating requirements (Regulations 8-34-301.1, 8-34-301.2, 8-34-303, and 8-34-305)	Y	C	
Part 4	Combustion zone temperature monitoring (Regulations 8-34-501.3 and 8-34-507)	Y	C	
Part 5	Flare temperature limit (RACT for CO and Regulations 2-5-301 and 8-34-301.3)	Y	I (See Comment)	In April 2020, there were four (4) instances where the A-4 Flare dropped below the permitted limit of 1402°F while the flare was in operation due to operations and maintenance (O&M) personnel testing new set points.
Part 6	Flare equipment requirements (RACT for CO and Regulation 8-34-301)	Y	C	
Part 7	Flare fuel restrictions (Cumulative Increase)	Y	C	
Part 8	Outlet NOx concentration limit for flare (RACT)	Y	C	
Part 9	deleted	Y	C	
Part 10	Outlet CO concentration limit for flare (RACT)	Y	C	
Part 11	deleted	Y	C	
Part 12	Landfill gas total reduced sulfur compounds concentration limit (RACT for SO2 and Regulation 9-1-302)	Y	C	
Part 13	Flare heat input limits and calculation procedures (Offsets, Cumulative Increase, and Regulation 2-1-301)	Y	C	

## Compliance Certification Report

**Site #:** A5095

**Address:** 4001 North Vasco Road

**Source #:** S-1, S-12, S-13

**Site Name:** Vasco Road Landfill

**City:** Livermore, CA

**Source Name:** MSW Landfill - Waste Decomposition Process Equipped with LFG Collection System (S-1), abated Flare (A-4), Waste and Cover Material Dumping (S-12), Excavating, Bulldozing, and Compacting Activities (S-13)

**Reporting Period:** 02/1/2020 to 01/31/2021

**Zip Code:** 94550

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Continuous or Intermittent	Comments
Part 14	Design capacity, waste acceptance, cumulative decomposable materials, and vehicle traffic limits (Regulations 2-1-301 and 2-1-234.3)	Y	C	
Part 15	Contaminated soil acceptance restrictions (Regulation 8-40-301)	Y	C	
Part 16	Usage limits for VOC-laden and metal-laden soils (Offsets and Regulations 2-5-302 and 8-2-301)	Y	C	
Part 17	deleted	Y	C	
Part 18	Record keeping requirements for VOC and metal laden soils (Offsets and Regulations 2-5-302 and 8-2-301)	Y	C	
Part 19	Particulate emission control measures (Regulations 2-1-403, 6-1-301, and 6-1-305)	Y	C	
Part 20	Flare source test requirements (RACT, Offsets, Cumulative Increase, and Regulations 2-5-301, 2-5-302, 8-34-301.3 and 8-34-412)	Y	C	
Part 21	Annual landfill gas characterization test (AB-2588 Air Toxic Hot Spots Act, RACT for SO <sub>2</sub> , and Regulations 2-5-302, 8-34-412, and 9-1-302)	Y	C	
Part 22	Record keeping requirements (RACT, Offsets, Cumulative Increase, and Regulations 2-1-301, 2-5-301, 2-5-302, 2-6-501, 6-1-301, 6-1-305, 8-2-301, 8-34-301, 8-34-304, and 8-34-501)	Y	C	
Part 23	Reporting periods and report submittal due dates for the Regulation 8, Rule 34 report (Regulation 8-34-411 and 40 CFR 63.1980(a))	Y	C	

## Compliance Certification Report

Site #: A5095  
 Address: 4001 North Vasco Road  
 Source #: S-7

Site Name: Vasco Road Landfill  
 City: Livermore, CA  
 Source Name: Non-retail Gasoline Dispensing Facility

Reporting Period: 02/1/2020 to 01/31/2021  
 Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Compliance (Y/N)	Continuous or Intermittent	Days out of compliance / Comments
<b>BAAQMD Regulation 8, Rule 5</b>	<b>Organic Compounds – Storage of Organic Liquids (10/18/06)</b>			
8-5-116	Exemption, Gasoline Storage Tanks at Gasoline Dispensing Facilities	N	C	
<b>SIP Regulation 8, Rule 5</b>	<b>Organic Compounds – Storage of Organic Liquids (6/5/03)</b>			
8-5-301	Storage Tank Control Requirements	Y	C	
8-5-303	Requirements for Pressure Vacuum Valves	Y	C	
8-5-501	Records	Y	C	
8-5-501.1	Types and amounts of materials stored	Y	C	
<b>BAAQMD Regulation 8, Rule 7</b>	<b>Organic Compounds – Gasoline Dispensing Facilities (11/6/02)</b>			
8-7-113	Tank Gauging and Inspection Exemption	Y	C	
8-7-114	Stationary Tank Testing Exemption	Y	C	
8-7-116	Periodic Testing Requirements Exemption	Y	C	
8-7-301	Phase I Requirements	Y	C	
8-7-301.1	Requirements for Transfers into Stationary Tanks, Cargo Tanks, and Mobile Refuelers	Y	C	
8-7-301.2	CARB Certification Requirements	Y	C	
8-7-301.3	Submerged Fill Pipe Requirement	Y	C	
8-7-301.5	Maintenance and Operating Requirement	Y	C	
8-7-301.6	Leak-Free and Vapor Tight Requirement for Components	Y	C	
8-7-301.7	Fitting Requirements for Vapor Return Line	Y	C	

## Compliance Certification Report

Site #: A5095

Address: 4001 North Vasco Road

Source #: S-7

Site Name: Vasco Road Landfill

City: Livermore, CA

Source Name: Non-retail Gasoline Dispensing  
Facility

Reporting Period: 02/1/2020 to 01/31/2021

Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Compliance (Y/N)	Continuous or Intermittent	Days out of compliance / Comments
8-7-301.10	Vapor Recovery Efficiency Requirements for New and Modified Systems	Y	C	
8-7-301.13	Annual Vapor Tightness Test Requirement	Y	C	
8-7-302	Phase II Requirements	Y	C	
8-7-302.1	Requirements for Transfers into Motor Vehicle Fuel Tanks	Y	C	
8-7-302.2	Maintenance Requirement	Y	C	
8-7-302.3	Proper Operation and Free of Defects Requirements	Y	C	
8-7-302.4	Repair Time Limit for Defective Components	Y	C	
8-7-302.5	Leak-Free and Vapor Tight Requirement for Components	Y	C	
8-7-302.6	Requirements for Bellows Nozzles	Y	C	
8-7-302.7	Requirements for Vapor Recovery Nozzles on Balance Systems	Y	C	
8-7-302.8	Minimum Liquid Removal Rate	Y	C	
8-7-302.9	Coaxial Hose Requirement	Y	C	
8-7-302.10	Construction Materials Specifications	Y	C	
8-7-302.12	Liquid Retain Limitation	Y	C	
8-7-302.13	Nozzle Spitting Limitation	Y	C	
8-7-302.14	Annual Back Pressure Test Requirements for Balance Systems	Y	C	
8-7-303	Topping Off	Y	C	
8-7-304	Certification Requirements	Y	C	
8-7-306	Prohibition of Use	Y	C	
8-7-307	Posting of Operating Instructions	Y	C	
8-7-308	Operating Practices	Y	C	
8-7-309	Contingent Vapor Recovery Requirement	Y	C	
8-7-313	Requirements for New or Modified Phase II Installations	Y	C	
8-7-316	Pressure Vacuum Valve Requirements, Aboveground Storage Tanks and Vaulted Below Grade Storage Tanks	Y	C	
8-7-401	Equipment Installation and Modification	Y	C	
8-7-406	Testing Requirements, New and Modified Installations	Y	C	



## Compliance Certification Report

Site #: A5095

Address: 4001 North Vasco Road

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Site Name: Vasco Road Landfill

City: Livermore, CA

Source Name: Non-retail Gasoline Dispensing  
Facility

Reporting Period: 02/1/2020 to 01/31/2021

Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Compliance (Y/N)	Continuous or Intermittent	Days out of compliance / Comments
8-7-407	Periodic Testing Requirements	Y	C	
8-7-408	Periodic Testing Notification and Submission Requirements	Y	C	
8-7-501	Burden of Proof	Y	C	
8-7-502	Right of Access	Y	C	
8-7-503	Record Keeping Requirements	Y	C	
8-7-503.1	Gasoline Throughput Records	Y	C	
8-7-503.2	Maintenance Records	Y	C	
8-7-503.3	Records Retention Time	Y	C	
<b>BAAQMD Condition # 7523</b>	<b>Gasoline Throughput Limit (Regulation 2-5-302)</b>	N	C	
<b>State of California, ARB, EO G-70-116-F</b>	<b>Certification of ConVault, Inc. Aboveground Filling/Dispensing Vapor Recovery System (11/30/95)</b>		C	
Paragraph 9	Tank Design Configuration Limitations	N	C	
Paragraph 10	Emergency Vent and Manway Requirement	N	C	
Paragraph 11	Requirement to Use ARB Certified Phase I and Phase II Systems	N	C	
Paragraph 12	Requirements for Phase I Components and Piping Configurations	N	C	
Paragraph 13	Requirements for the Routing of the Coaxial Hose and for Liquid Traps	N	C	
Paragraph 14	P/V Valve Requirements	N	C	
Paragraph 15	Tank Insulation Requirements	N	C	
Paragraph 16	Tank Exterior Surface Requirements	N	C	
Paragraph 17	Requirement to Comply with Local Air District Rules	N	C	
Paragraph 18	Requirements for Deliveries from a Cargo Truck	N	C	
Paragraph 19	Leak Checking Requirements	N	C	
Paragraph 20	Requirement to Comply with Local Fire Official's Requirements	N	C	
Paragraph 21	Requirement to Comply with Other Specified Rules and Regulations	N	C	

## Compliance Certification Report

**Site #:** A5095

**Address:** 4001 North Vasco Road

**Source #:** S-7

**Site Name:** Vasco Road Landfill

**City:** Livermore, CA

**Source Name:** Non-retail Gasoline Dispensing  
Facility

**Reporting Period:** 02/1/2020 to 01/31/2021

**Zip Code:** 94550

Applicable Requirement	Regulation Title or Description of Requirement	Compliance (Y/N)	Continuous or Intermittent	Days out of compliance / Comments
Paragraph 22	Prohibition on Alteration of Equipment, Parts, Design, or Operation	N	C	
Paragraph 23	This Order Supersedes EO G-70-116-E (4/1/95)	N	C	

## Compliance Certification Report

Site #: A5095  
 Address: 4001 North Vasco Road  
 Source #: S-14

Site Name: Vasco Road Landfill  
 City: Livermore, CA  
 Source Name: Green Waste Processing  
 Operations (S-14); Water Sprayer (A-14)

Reporting Period: 02/1/2020 to 01/31/2021  
 Zip Code: 94550

Applicable Requirement	Regulation Title or Description of Requirement	Compliance (Y/N)	Continuous or Intermittent	Days out of compliance / Comments
<b>BAAQMD Regulation 6, Rule 1</b>	<b>Particulate Matter – General Requirements (8/1/18)</b>			
6-1-301	Ringelmann No. 1 Limitation	N	C	
6-1-305	Visible Particles	N	C	
6-1-311.1	Total Suspended Particulate (TSP) Weight Limits	N	C	
6-1-401	Appearance of Emissions	N	C	
<b>SIP Regulation 6</b>	<b>Particulate Matter and Visible Emissions (9/4/98)</b>			
6-1-301	Ringelmann No. 1 Limitation	Y	C	
6-1-305	Visible Particles	Y	C	
6-1-311	Total Suspended Particulate (TSP) Weight Limits	Y	C	
6-1-401	Appearance of Emissions	Y	C	
<b>BAAQMD Regulation 8, Rule 2</b>	<b>Organic Compounds – Miscellaneous Operations (7/20/05)</b>			
8-2-301	Miscellaneous Operations	Y	C	
<b>BAAQMD Condition # 25515</b>				
Part 1	Waste Processing Limitations (Cumulative Increase)	Y	C	
Part 2	Operating requirements for water spray system (Cumulative Increase and Regulation 6-1-301)	Y	C	
Part 3 (a-b)	Record keeping requirements (Cumulative Increase and Regulations 1-441)	Y	C	

## Compliance Certification Report

**Site #:** A5095  
**Address:** 4001 North Vasco Road  
**Source #:** S-15

**Site Name:** Vasco Road Landfill  
**City:** Livermore, CA  
**Source Name:** Wood Waste Processing  
 Operations (S-15); Water Sprayer (A-15)

**Reporting Period:** 02/1/2020 to 01/31/2021  
**Zip Code:** 94550

Applicable Requirement	Regulation Title or Description of Requirement	Compliance (Y/N)	Continuous or Intermittent	Days out of compliance / Comments
<b>BAAQMD Regulation 6, Rule 1</b>	<b>Particulate Matter – General Requirements (8/1/18)</b>			
6-1-301	Ringelmann No. 1 Limitation	N	C	
6-1-305	Visible Particles	N	C	
6-1-311.1	Total Suspended Particulate (TSP) Weight Limits	N	C	
6-1-401	Appearance of Emissions	N	C	
<b>SIP Regulation 6</b>	<b>Particulate Matter and Visible Emissions (9/4/98)</b>			
6-1-301	Ringelmann No. 1 Limitation	Y	C	
6-1-305	Visible Particles	Y	C	
6-1-311	Total Suspended Particulate (TSP) Weight Limits	Y	C	
6-1-401	Appearance of Emissions	Y	C	
<b>BAAQMD Condition # 25516</b>				
Part 1	Waste Processing Limitations (Cumulative Increase)	Y	C	
Part 2	Operating requirements for water spray system (Cumulative Increase and Regulation 6-1-301)	Y	C	
Part 3 (a-b)	Record keeping requirements (Cumulative Increase and Regulations 1-441)	Y	C	