



Region 2 Caribbean Environmental Protection Division
Multimedia Permits and Compliance Branch

CAA Inspection Report

Inspection Date: 5/1/2024

Facility Name: El Coqui Landfill

Facility Address: PR-923, Km 2.5, Buena Vista Ward, Humacao, PR 00741

EPA Lead Inspector: Gloria Diaz-Galarza, 787-977-5882, diaz-galarza.gloria@epa.gov

EPA Asst. Inspector: Alex Rivera, 787-977-5845, rivera.alex@epa.gov
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Facility Contact: Gamaliel De La Mata, Landfill Operation Manager, 787-417-7063 ext. 276, gdelamata@ecwaste.com

This report is a summary of observations and information gathered from the facility at the time of the inspection. The information provided does not constitute a final decision on compliance with Clean Air Act (“CAA”) regulations or applicable permits, nor is it meant to be a comprehensive summary of all activities and processes conducted at the facility.

Summary of Onsite Observations

A. Opening Conference

The representatives of the United States Environmental Protection Agency (EPA), Gloria Diaz-Galarza, Alex Rivera, Katherine Marmanides, Victor Tu, Maria Malave, Daniel Heins, and Steve Rapp, arrived at El Coquí Landfill Company, LLC (“ECL,” or “facility”) located at PR-923, Km 2.5, Buena Vista Ward in Humacao, PR at approximately 10:40 am. The EPA representatives (“the inspectors”) were met upon arrival by Mr. Gamaliel De La Mata, Landfill Operation Manager. Mr. De La Mata led the inspectors to a conference room to start the opening meeting and inspection. The inspectors presented their identification credentials and provided an overview and scope of the inspection.

As part of the opening conference, the inspectors asked Mr. De La Mata a variety of questions. The following is a summary of the conversation with Mr. De La Mata:

1. Landfill operations – Mr. De La Mata used the landfill drawings/layout to describe the different sections of the landfill, active and inactive areas, wells, etc.
2. Surface emissions monitoring (“SEM”) – The facility has three (3) employees in charge of the operation of the facility gas collection and control system (“GCCS”) and SEM, one (1) manager and two (2) technicians. At the time of the inspection, all three (3) were out of the office. The facility added that SEM activities are conducted in-house, and that the team uses an equipment similar to IRWin/SEM 5000. The facility representative mentioned that there are no areas excluded from monitoring. EPA as a follow-up asked about the coverage shown in the NSPS semi-annual reports, noting that large swaths of the vegetated north has very limited coverage in the SEM survey maps. Mr. De La Mata acknowledged that surveys in those areas may be limited to the access roads/paths and not traverse through the fully vegetated areas. He also acknowledged on follow-up that active areas were excluded for safety reasons.
3. Cover material – Mr. De La Mata informed that the type of cover material used is soil and as alternative cover the facility uses tarps, but just for the active area. The thickness of the covers are 6-8 inches for slopes and 1 foot for the deck.
4. Safety – Mr. De La Mata added that there were no dangerous areas to be aware of (health and safety considerations/concerns) that could affect the SEM inspection aside from the active area, and informed that the only challenge would be related to slippery areas due to past and current rain events.
5. Active areas – Mr. De La Mata informed that the current active areas for waste disposition, at the time of the inspection, were the area near cells 5B and 9B (towards central portion of the landfill).
6. Final cover – Mr. De La Mata stated that there was one capped area on the northwest slope of the landfill, covered with dirt, liner, and protective cover. The thickness of the covers is approximately four (4) feet in total.
7. Areas where waste has been in place fewer than 5 years – Mr. De La Mata indicated that there are areas with GCCS where the waste has been in place fewer than five (5) years and those are 9A, 9B, cell 8; cell/area 9B2 is two (2) years.
8. Type of landfill gas collection wells – There are approximately 132 wells and only two (2) horizontals in HC8 and HC9.
9. Types of waste – In terms of dedicated areas, Mr. De La Mata added that there are areas of the property dedicated to storing special wastes, such as white goods and recycling. Construction debris is managed mixed while vegetative material is managed separate. The main landfill hill does not have cells dedicated to specific waste types.
10. GCCS status – Mr. De La Mata informed that at the time of the inspection there were approximately five (5) wells disconnected from the GCCS. Also, he added that they have been disconnected for less than a month and will be back to normal in approximately a month from the day of the inspection. The facility collects around 1,700 cfm of landfill gas.
11. Vegetation on the cover / cover maintenance – According to Mr. De La Mata, the site manages vegetation on the cover by clearing areas to create trails to access the wells and conduct SEM.

The inspectors explained that during the facility tour, they would capture digital images of the facility wells and any other operation using a digital point and shoot camera. The facility representatives did not express any concerns with the inspectors' capturing photos.

B. Walkthrough/SEM

At approximately 11:25 AM, Mr. De La Mata led the inspectors on a tour of ECL. EPA inspectors used an Elkins IRwin to perform method 21 to measure surface methane concentrations and a Forward Looking Infrared (FLIR) optical gas imaging camera to document landfill gas emissions. The facility has approximately 90 wells that have dual extraction for gas and leachate. The walkthrough used access trails to perform a limited survey of the northern, vegetated portion of the landfill, primarily focusing on monitoring accessible penetrations. Limited attempts to monitor off the trail were made, but the thick vegetation prevented a more thorough monitoring. The walkthrough continued to the un-vegetated central southern portion of the landfill, including in areas where collection was offline. After returning to the office, the Inspectors and Mr. De La Mata then drove to the western side of the landfill to monitor leachate risers and other penetrations near the western edge of the facility. Inspectors sometimes walked and sometimes drove between risers/wells during this portion of the survey.

During the walkthrough the inspectors observed extensive cover integrity issues, including leachate breakouts, erosion gulleys with exposed waste, exposed waste in general through the landfill, and impenetrable vegetation full of trees with woody roots. Inspectors observed an abandoned well venting landfill gas from an open-ended hose, as well as another well venting from a sample port. Inspectors documented emissions associated with rusted infrastructure and poorly sealed leachate risers. Inspectors found high methane readings associated with the wells offline, both at the penetrations and in the surrounding areas. In total, EPA inspectors marked 55 exceedances above 500 ppm, of which 6 were above the lower explosive limit for methane. The facility walkthrough was completed at 3:50 PM and the bump check was completed by the inspectors at 3:56 PM. Before completing the bump check, the inspectors asked if the facility wanted to see a bump check of the EPA equipment, but the facility staff declined. After the bump check, the inspectors proceeded to have an internal discussion prior to the closeout meeting. See Appendix A (SEM Data), Appendix B (SEM Map), Appendix C (Photo Log), Appendix D (Instrument & Calibration Data) and closing meeting discussion summary for further details about the SEM findings and observations.

C. Closing Conference

At approximately 4:10 PM, the group returned to the conference room for a closing conference with Mr. De La Mata. The inspectors thanked the facility representative for his time and cooperation during the inspection. As agreed during the inspection opening meeting, the inspectors discussed with Mr. De La Mata the main findings and observations during the SEM, the following is a summary of the conversation:

- Although the monitoring activity did not cover the entire extent of the facility SEM plan, the inspectors were able to find 55 different locations with surface concentrations of methane over 500 ppm.
 - This was significantly more than the facility's own surveys, which typically find 0 exceedances. The inspectors noted that while no technicians were available to be interviewed, this discrepancy indicates likely shortcomings in training.
 - Most exceedances were significantly above the standard, and a handful were at flammable concentrations.
- Inspectors noted that large areas were not being monitored at all due to the thick vegetation.
 - Inspectors highlighted that there was still the requirement to both traverse at 30-meter intervals and to monitor all penetrations and areas with visual indicators of elevated gas.
 - With cover as thin as 6 inches, tree roots penetrate the cover and create paths for gas to escape, and a full SEM survey should be monitoring *all* cover penetrations.
 - The limited surveys in the vegetated areas give a misleading impression of the emissions situation – EPA found that the paths with compacted cover typically had low emissions, but background levels increased, and exceedances were observed when venturing off the trails into the thicker vegetation, particularly at trees.
 - Thick vegetation was extensive across the northern half and western slope of the landfill.
- In addition to the unmanaged vegetation, there were extensive cover integrity issues in the bare dirt cover areas.
 - There was extensive exposed waste, including in areas where it was clearly not associated with recent rains.
 - Erosion rills were widespread.
 - Mr. De La Mata noted that the rainy season makes it hard to make timely corrective actions.
 - Inspectors noted that other landfills in high rain areas take more pro-active steps to reduce/prevent erosion from stormwater, including use of tarps, seeding, thicker cover, and conveyances to control and direct stormwater.
- Lack of collection near the active area was found.
 - This area was still subject to gas collection requirements (with at least some of the waste having been in place for five years or more).
 - Instead of re-routing headers, installing horizontal collectors, or other potential options, the facility opted to fully disconnect the area from gas collection.
 - This resulted extremely high SEM readings at the wellheads and exceedances/generally elevated readings throughout the area.
- Inspectors observed significant emissions via the FLIR camera and Method 21 at the leachate risers, which also had visual signs of poor maintenance.
- Gas was additionally observed to be venting out of a sample port on one well and out an open hose from another well.
- In summary, the specific areas of concern expressed by the inspectors were the following:
 - SEM program
 - Venting gas/poor maintenance on gas and leachate infrastructure

- Lack of gas collection coverage/offline wells
- Cover integrity
- Unmanaged vegetation
- The inspectors informed Mr. De La Mata that the SEM data along with other supplemental documentation such as maps will be shared via email as soon as possible¹. The inspectors also informed Mr. De La Mata that corrective actions should be coordinated as soon as the SEM data becomes available to the facility, and that SEM corrections should be documented and incorporated into their semi-annual reporting.
- Additionally, the inspectors mentioned to Mr. De La Mata that in November 2021 a site inspection was conducted with the purpose of discussing ECL's request for higher operating values (HOVs) for the operation of several gas extraction wells. During the November 2021 inspection, ECL agreed on providing EPA updated data, including carbon monoxide (CO) data for each of the wells in need of HOVs, but such submission remains pending. Mr. De La Mata requested the inspectors to share a copy of the inspection report and agreed on following up with the pending matter².
- The inspectors also informed Mr. De La Mata that an inspection report will be prepared by EPA and shared within approximately 45-60 days.

The inspectors concluded the inspection and departed from the facility at approximately 4:35 PM.

Appendices

Appendix A - SEM Data

Appendix B - SEM Map

Appendix C - Photo Log

Appendix D - Instrument & Calibration Data

End of Report

Lead Inspector's Name: Gloria Diaz-Galarza

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Date: 2024.06.05
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Supervisor's Name: Nancy Rodríguez

NANCY RODRIGUEZ Digitally signed by
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¹ On May 2, 2024, EPA's Daniel Heins sent the SEM documentation to EC Waste's Gamaliel De La Mata via email.

² On May 2, 2024, EPA's Alex Rivera shared with EC Waste's Gamaliel De La Mata EPA's November 18, 2021, inspection report and follow up communications via email.

Appendix A: SEM Data

Table #1: SEM Exceedances

| ID | Description | Time | Reading (ppm) | Latitude | Longitude |
|-----|--|-------|------------------------------------|-----------|------------|
| A1 | Leachate pipe | 11:27 | 4744 | 18.128724 | -65.806713 |
| A2 | Main valve flares | 11:35 | 10028 | 18.129244 | -65.805808 |
| A3 | Second valve to flares penetration and from pipe top | 11:36 | 60000 at pipe top; 3280 at base | 18.129260 | -65.805951 |
| A4 | GW01 | 11:40 | 1303 | 18.129511 | -65.806011 |
| A5 | GW38 | 11:43 | 2776 | 18.129316 | -65.806492 |
| A6 | Vegetation with leak | 11:46 | 3523 | 18.129471 | -65.806280 |
| A7 | GW05 | 12:00 | 2026 | 18.130127 | -65.805912 |
| A8 | Trees off side of access path | 12:13 | 681 | 18.131364 | -65.808453 |
| A9 | Vent on GW141 (just top) | 12:19 | 594 (top) | 18.130634 | -65.808182 |
| A10 | GW138 - venting disconnected pipe, also base | 12:26 | 100000 at top; 3085 at base | 18.130308 | -65.809113 |
| A11 | GW130 | 12:33 | 8198 | 18.129571 | -65.809979 |
| A12 | Exposed waste / distressed vegetation | 12:40 | 2938 | 18.129012 | -65.810448 |
| A13 | Exposed waste / disconnected well | 12:43 | 67042 | 18.128461 | -65.810520 |
| A14 | Disconnected well with exposed waste | 12:45 | 15149 | 18.128475 | -65.810971 |
| A15 | Disconnected well with exposed waste | 12:48 | 44743 | 18.128101 | -65.811226 |
| A16 | Disconnected well with exposed waste | 12:50 | 82877 | 18.127622 | -65.811357 |
| A17 | Exposed waste | 12:51 | 1454 | 18.127448 | -65.811606 |
| A18 | Disconnected well | 12:53 | 1237 | 18.127402 | -65.811843 |
| A19 | Exposed waste | 12:59 | 2919 | 18.127140 | -65.811419 |
| A20 | Active well (unlabeled) on top deck | 13:01 | 17580 | 18.127400 | -65.810999 |
| A21 | Active well (unlabeled) on top deck, also seal gap | 13:03 | 26602 | 18.127645 | -65.810514 |
| A22 | Active well (unlabeled) on top deck | 13:05 | 12344 | 18.128042 | -65.810341 |
| A23 | Active well (unlabeled) on top deck | 13:09 | 22746 | 18.127460 | -65.810006 |
| A24 | GW159 | 13:12 | 217025 | 18.127001 | -65.810374 |
| A25 | Exposed waste (multiple hits in area) | 13:19 | 998 | 18.127052 | -65.810770 |
| A26 | Well on top of landfill | 13:20 | 12276 | 18.126808 | -65.810947 |

| | | | | | |
|-----|---|-------|---|-----------|------------|
| A27 | Erosion rill | 13:22 | 1810 | 18.126501 | -65.811069 |
| A28 | GW57 | 13:25 | 5072 | 18.126334 | -65.810953 |
| A29 | Erosion rill | 13:28 | 2016 | 18.126400 | -65.810786 |
| A30 | Erosion/exposed waste | 13:30 | 3791 | 18.126456 | -65.810518 |
| A31 | Exposed waste by well 65 | 13:34 | 658 | 18.126348 | -65.810262 |
| A32 | Erosion rill | 13:36 | 1204 | 18.126671 | -65.810268 |
| A33 | Erosion rill | 13:38 | 744 | 18.126805 | -65.809914 |
| A34 | GW161 | 13:40 | 3303 | 18.126853 | -65.809518 |
| A35 | Erosion rill | 13:44 | 4614 | 18.127322 | -65.809430 |
| A36 | GW77 + area | 13:46 | 46654 | 18.127480 | -65.809242 |
| A37 | Rill on slope + surrounding area | 13:49 | 795 | 18.127886 | -65.809375 |
| A38 | Rill at top of slop near well | 13:51 | 3760 | 18.128061 | -65.809512 |
| A39 | Rills on slope | 13:53 | 2978 | 18.128245 | -65.809373 |
| A40 | GW71 | 13:55 | 3747 | 18.128646 | -65.809104 |
| A41 | Rill on slope + surrounding area | 13:58 | 6495 | 18.129096 | -65.808865 |
| A42 | GW73 | 14:06 | 18705 | 18.128073 | -65.808442 |
| A43 | GW75 | 14:09 | 909 | 18.127375 | -65.808495 |
| A44 | GW74 | 14:12 | 567 | 18.127612 | -65.808306 |
| A45 | Leachate riser 5B (seal and penetration) | 14:19 | 13251 | 18.127172 | -65.807935 |
| A46 | Leachate pipe and marking pipe nearby | 14:20 | 1875 at leachate pipe; 700 at marker pipe | 18.127165 | -65.808007 |
| A47 | Leachate manhole and collection penetration | 14:26 | 3873 at manhole; 800 at penetration | 18.126601 | -65.807787 |
| A48 | Well phase/cell 8 | 15:02 | 14498 | 18.126829 | -65.814065 |
| A49 | GW90 | 15:06 | 2761 | 18.127128 | -65.813403 |
| A50 | Leachate riser / seal | 15:15 | 2021 | 18.127276 | -65.813832 |
| A51 | Soil near leachate pipe | 15:19 | 1029 | 18.128134 | -65.813329 |
| A52 | Top of fitting, sample port, and at base | 15:24 | 257924 at port; 528 at base | 18.129080 | -65.812904 |
| A53 | GW96R - both base and bad seal on pump | 15:29 | 5725 at bad seal; 3100 at penetration | 18.129118 | -65.812630 |
| A54 | Leachate riser / pipe | 15:33 | 14387 | 18.129916 | -65.812429 |
| A55 | Ground by leachate riser R-6A | 15:40 | 16616 | 18.130532 | -65.811962 |

Probe tip was fixed on a hiking pole 8 cm from the base of the pole, all readings taken from 8 to 10 cm from the ground with the exception of the secondary readings as noted in the table and at A9, which was only observed above 500 ppm at pipe top.

Background readings:

Upwind: 0 ppm

Downwind: 0 ppm

55 exceedances total:

500 – 1,000 ppm: 8

1,000 – 5,000: 23

5,000 – 10,000: 4

10,000 – 50,000: 14

50,000 – 100,000: 3

>100,000: 3

Appendix B: Map



Red lines trace monitoring path. Exceedances are plotted and labeled as described in Appendix B. Path on western perimeter includes some stretches in vehicle driving between risers/wells. Coverage on the northern vegetated areas was primarily limited to access road/paths due to thick vegetation.

The survey covered less than 40 acres of the landfill.

Appendix C: Photo Log

El Coqui Humacao Landfill Digital Image Log:

| Date | Time | Digital image number | Description |
|----------|-------------|----------------------|--|
| 5/1/2024 | 11:09:00 AM | P5010001.JPG | Map of the El Coqui landfill |
| 5/1/2024 | 11:26:00 AM | P5010002.JPG | Flare station |
| 5/1/2024 | 11:27:00 AM | P5010003.JPG | Leachate pipe |
| 5/1/2024 | 11:31:00 AM | P5010004.JPG | Tree on cover of landfill |
| 5/1/2024 | 11:35:00 AM | P5010005.JPG | Main valve to flares |
| 5/1/2024 | 11:36:00 AM | P5010006.JPG | Second valve to flares penetration and from pipe top |
| 5/1/2024 | 11:40:00 AM | P5010007.JPG | EW-01 |
| 5/1/2024 | 11:43:00 AM | P5010008.JPG | EW-38 |
| 5/1/2024 | 11:46:00 AM | P5010009.JPG | Vegetation with leak |
| 5/1/2024 | 12:00:00 PM | P5010010.JPG | EW-05 |
| 5/1/2024 | 12:02:00 PM | P5010011.JPG | Tall, dense vegetation |
| 5/1/2024 | 12:13:00 PM | P5010012.JPG | Trees off side of access path |
| 5/1/2024 | 12:22:00 PM | P5010013.JPG | Hills in background near landfill |
| 5/1/2024 | 12:22:00 PM | P5010014.JPG | Ocean in background near landfill |
| 5/1/2024 | 12:26:00 PM | P5010015.JPG | EW138 - venting disconnected pipe, also base |
| 5/1/2024 | 12:28:00 PM | P5010016.JPG | Working face |
| 5/1/2024 | 12:30:00 PM | P5010017.JPG | Open hose at EW-138 |
| 5/1/2024 | 12:33:00 PM | P5010018.JPG | EW-130 |
| 5/1/2024 | 12:35:00 PM | P5010019.JPG | Working area |
| 5/1/2024 | 12:40:00 PM | P5010020.JPG | Exposed waste / distressed vegetation |
| 5/1/2024 | 12:43:00 PM | P5010021.JPG | Disconnected well with exposed waste |
| 5/1/2024 | 12:45:00 PM | P5010022.JPG | Disconnected well with exposed waste |
| 5/1/2024 | 12:47:00 PM | P5010023.JPG | Gas bubbles through water |
| 5/1/2024 | 12:48:00 PM | P5010024.JPG | Disconnected well with exposed waste |
| 5/1/2024 | 12:50:00 PM | P5010025.JPG | Disconnected well with exposed waste |
| 5/1/2024 | 12:51:00 PM | P5010026.JPG | Exposed waste |
| 5/1/2024 | 12:53:00 PM | P5010027.JPG | Disconnected well |
| 5/1/2024 | 12:59:00 PM | P5010028.JPG | Exposed waste |
| 5/1/2024 | 1:00:00 PM | P5010029.JPG | Disconnected well |
| 5/1/2024 | 1:01:00 PM | P5010030.JPG | Active well (unlabeled) on top deck |
| 5/1/2024 | 1:03:00 PM | P5010031.JPG | Active well (unlabeled) on top deck, also gap in top seal |
| 5/1/2024 | 1:05:00 PM | P5010032.JPG | Gap in seal |
| 5/1/2024 | 1:05:00 PM | P5010033.JPG | Active well (unlabeled) on top deck |
| 5/1/2024 | 1:09:00 PM | P5010034.JPG | Active well (unlabeled) on top deck with exposed waste at base |
| 5/1/2024 | 1:12:00 PM | P5010035.JPG | EW-159 |
| 5/1/2024 | 1:19:00 PM | P5010036.JPG | Exposed waste (multiple hits in area) |
| 5/1/2024 | 1:20:00 PM | P5010037.JPG | Well on top of landfill (unlabeled) |
| 5/1/2024 | 1:22:00 PM | P5010038.JPG | Erosion rill |
| 5/1/2024 | 1:25:00 PM | P5010039.JPG | EW-57 with exposed waste at base |
| 5/1/2024 | 1:28:00 PM | P5010040.JPG | Erosion rill |
| 5/1/2024 | 1:30:00 PM | P5010041.JPG | Erosion/exposed waste |

| | | | |
|----------|------------|--------------|--|
| 5/1/2024 | 1:34:00 PM | P5010042.JPG | Exposed waste by well EW-65 |
| 5/1/2024 | 1:36:00 PM | P5010043.JPG | Erosion rill |
| 5/1/2024 | 1:38:00 PM | P5010044.JPG | Erosion rills |
| 5/1/2024 | 1:40:00 PM | P5010045.JPG | EW-161 |
| 5/1/2024 | 1:44:00 PM | P5010046.JPG | Erosion rill |
| 5/1/2024 | 1:46:00 PM | P5010047.JPG | EW-77 + area |
| 5/1/2024 | 1:49:00 PM | P5010048.JPG | Rill on slope |
| 5/1/2024 | 1:51:00 PM | P5010049.JPG | Rill at top of slope near well |
| 5/1/2024 | 1:53:00 PM | P5010050.JPG | Rills on slope |
| 5/1/2024 | 1:55:00 PM | P5010051.JPG | EW-71 with exposed waste at base |
| 5/1/2024 | 1:58:00 PM | P5010052.JPG | Rill on slope with exposed waste |
| 5/1/2024 | 2:06:00 PM | P5010053.JPG | EW-73 |
| 5/1/2024 | 2:09:00 PM | P5010054.JPG | EW-75 with exposed waste in surrounding area |
| 5/1/2024 | 2:12:00 PM | P5010055.JPG | EW-74 |
| 5/1/2024 | 2:12:00 PM | P5010056.JPG | Well head EW-74 |
| 5/1/2024 | 2:19:00 PM | P5010057.JPG | Leachate riser 5B |
| 5/1/2024 | 2:20:00 PM | P5010058.JPG | Leachate pipe |
| 5/1/2024 | 2:22:00 PM | P5010059.JPG | Leachate pipe |
| 5/1/2024 | 2:26:00 PM | P5010060.JPG | Leachate manhole and collection penetration |
| 5/1/2024 | 2:28:00 PM | P5010061.JPG | Leachate collection area |
| 5/1/2024 | 3:02:00 PM | P5010062.JPG | Well phase/cell 8 |
| 5/1/2024 | 3:06:00 PM | P5010063.JPG | EW-90 |
| 5/1/2024 | 3:15:00 PM | P5010064.JPG | Leachate riser 5A |
| 5/1/2024 | 3:19:00 PM | P5010065.JPG | Soil near leachate pipe |
| 5/1/2024 | 3:24:00 PM | P5010066.JPG | Top of fitting and sample port |
| 5/1/2024 | 3:29:00 PM | P5010067.JPG | EW-96R and piping |
| 5/1/2024 | 3:30:00 PM | P5010068.JPG | EW-96R and piping with corroded flange |
| 5/1/2024 | 3:33:00 PM | P5010069.JPG | Leachate riser and pipe, pump on ground |
| 5/1/2024 | 3:40:00 PM | P5010070.JPG | Ground by leachate riser R-6A |



P5010003.JPG



P5010004.JPG



P5010005.JPG



P5010006.JPG



P5010007.JPG



P5010008.JPG



P5010009.JPG



P5010010.JPG



P5010011.JPG



P5010012.JPG



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P5010018.JPG



P5010019.JPG



P5010020.JPG



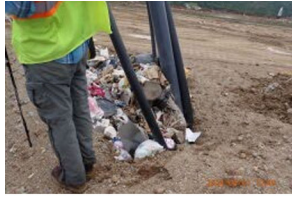
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P5010024.JPG



P5010025.JPG



P5010026.JPG



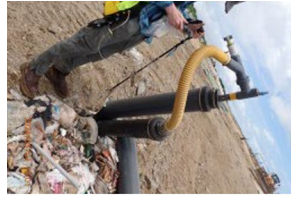
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P5010029.JPG



P5010030.JPG



P5010031.JPG



P5010032.JPG



P5010033.JPG



P5010034.JPG



P5010035.JPG



P5010036.JPG



P5010037.JPG



P5010038.JPG



P5010039.JPG



P5010040.JPG



P5010041.JPG



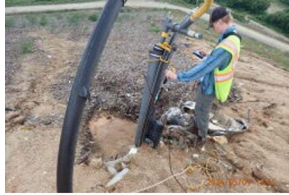
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P5010044.JPG



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P5010046.JPG



P5010047.JPG



P5010048.JPG



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P5010051.JPG



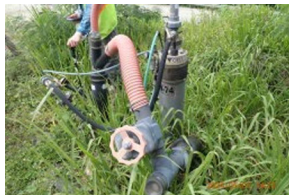
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Appendix D: Instrument & Calibration Data

The survey was conducted using an Inficon IRwin device using the Elkins Earthworks software, held by EPA Region 2 with Property Tag # B38121. Daniel Heins operated the instrument.

Calibration Checks

| Date/Time | Gas Concentration (ppm) | R2 IRwin Reading (ppm) |
|------------------|-------------------------|------------------------|
| 2024-05-01 09:55 | 500 | 500 |
| 2024-05-01 16:00 | 500 | 400 |

The instrument was calibrated according to Method 21 and manufacturer instructions with zero gas and 500 ppm methane. Bump checks were conducted before and after the survey.

Pre-survey bump checks show successful calibration. Post-survey bump check shows downward drift, possibly resulting in false negatives (i.e., missed exceedances) and potential underestimation of the severity of measured exceedances.

Response Time and Precision Check

| Trial | Calibration Gas ppm | R2 IRwin | |
|-------|---------------------|---------------|----------|
| | | Reading (ppm) | Time (s) |
| 1 | 500 | 500 | 5 |
| 2 | 500 | 500 | 5 |
| 3 | 500 | 490 | 4 |

The instrument was calibrated and checked for response time and precision on 4/30/24 at 10am using the 0 air and 500 ppm from the same cylinders as during the inspection. All readings are within 10% of the known calibration value. Response times are approximately 4-5 seconds, under the maximum of 30 seconds.

Calibration Gas

| Composition | Manufacturer | Lot Number | Expiration Date |
|-----------------------------------|--------------|-----------------|-----------------|
| Zero air <1 ppm total hydrocarbon | Airgas | 304-402941563-1 | 2/23/2028 |
| 500 ppm methane in air | Airgas | 304-402960982-1 | 2/2/2028 |

These were used for the calibration and bump checks on May 1, 2024, for the inspection and during the response time and precision checks on April 30, 2024.