



Clean Air Act Partial Compliance Evaluation Inspection Report

Wasco County Landfill

2550 Steele Road
The Dalles, Oregon

Inspection Date: June 20, 2024

Report Author Signature

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Attachment 5 TVA 2020 Calibration

I. Basic Facility and Inspection Information

Facility: Wasco County Landfill
2550 Steele Road
The Dalles, Oregon 97058

Mailing Address: Wasco County Landfill
2550 Steele Road
The Dalles, Oregon 9705

AFS/FRS Number: 110014271019

SIC: 4953 Refuse Systems

NAICS: 562212 Solid Waste Landfill

Permit Number: No. 33-0007-TV-01

Facility Contacts: Nancy Mitchell
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Date of Inspection: June 20, 2024

Inspection Start/End Times: 12:40 –16:40.

Inspection Notice: This was an unannounced inspection.

II. Purpose of Inspection

This was a Clean Air Act (CAA) compliance inspection by the Environmental Protection Agency (EPA). Inspector Conley, EPA Region 10, led the inspection and was assisted by EPA inspectors Alyson Skeens, EPA Region 10, and Steve Rapp, EPA AED/OECA, (collectively, “the inspectors”). The Eastern Region of the Oregon Department of Environmental Quality (ODEQ) was made aware of the inspection beforehand but was unable to join the inspection.

This was a partial compliance evaluation by the U.S. Environmental Protection Agency Region 10. The purpose was to identify potential compliance concerns with CAA regulations, specifically the National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills, 40 CFR Part 63 Subpart AAAA and 40 CFR Part 61 Subpart M—National Emission Standard for Asbestos. The facility operates under a Title V Air Operating Permit (33-0007-TV-01), which was issued by ODEQ on July 13, 2023, and expires on July 1, 2028. The facility is also subject to the federally enforceable Oregon State Plan for existing municipal solid waste landfills. The facility is regulated under the Oregon Administrative Rules at Chapter 340,

Division 236 (OAR 340-236-0500) entitled “Solid Waste Landfills: Emission Standards for Municipal Solid Waste Landfills.”

Disclaimer

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

III. Compliance History

A review of EPA’s Enforcement and Compliance History Online (ECHO) database indicates that there have been three previous compliance evaluations in the past five years. The EPA conducted an off-site Partial Compliance Evaluation on September 16, 2022. The ODEQ conducted on-site Full Compliance Evaluations on September 20, 2019 and February 15, 2023.

A notice of violation was sent to the facility on March 2, 2023 by the EPA, this is listed in ECHO as an informal enforcement action. There are no formal enforcement actions listed in ECHO in the last five years.

IV. Pre-Inspection Observations

We went directly to the facility. No observations were made prior to the scheduled inspection.

V. Facility and Process Description

The following facility description is based on information provided by facility representatives in the opening conference as well as documents provided by the facility under the inspection records request.

Waste Connections operates the Wasco County Landfill (“the landfill,” “the facility,” or “Wasco”) on 213 acres of land south and east of The Dalles in a rural agricultural setting. The Landfill has an estimated design capacity of 5.4 million cubic yards, with approximately 1.73 million cubic yards of airspace left as of the end of 2022. The landfill began accepting waste in 1973. The current landfill has three working areas, Phase 1, Phase III, and Phase IV (there is not a Phase II).

Phase I of the landfill is an unlined area of about 20 acres, waste was last placed in Phase I in 1995. Phase I is a closed area where waste has been deposited for more than 2 years. A passive perimeter landfill gas collection system in Phase I allows emissions to vent directly to the atmosphere through surface pipes. In the opening conference Nancy Mitchell described these vents, they are 12-foot vent pipes installed in Phase I (photo P6200150). These vents are not part of the active collection system.

In 1991, Waste Connections purchased the landfill and started working on Phase III of the landfill. Phase III of the landfill is approximately 12 acres. Phase III is lined. Based on the solid waste permitting records, construction in Phase III first occurred between 1995 and 1999.

The active Gas Collection and Control System is installed in Phase IV of the landfill. Construction and waste placement in Phase IV began in 2001 and is ongoing. A map of the facility including the outlines of each phase and the locations of the vertical gas collection wells is included in Attachment 3.

The facility installed a new enclosed flare on or around June 13, 2024. The new flare is rated at ~1,400 standard cubic feet per minute (“scfm”) and replaced a candlestick flare rated at 750 scfm, according to the design plan and the facility representatives. The candlestick flare is described as 1,100 cfm in the semiannual reports provided to EPA.

VI. Entry and Opening Conference

Inspectors Skeens, Rapp and I arrived at 9:55am. We arrived at the front office, which was not occupied. At approximately 10:00am Austen Keller met us at the front office. We presented our credentials and I explained that we were onsite to conduct an inspection to evaluate compliance with the Clean Air Act. Mr. Keller called Nancy Mitchell, the site manager, to inform her that we were onsite. Mr. Keller informed us that Ms. Mitchell was about an hour and a half away from the facility and showed us to a conference room to wait. We reviewed materials while we waited. At approximately 11:30 am we checked with Mr. Keller about the estimated arrival of the site manager and decided to leave the facility to have lunch while Ms. Mitchell was on her way to the site. We returned at approximately 12:30 and started the opening conference at 12:40.

Inspectors Skeens, Rapp and I presented our credentials to Ms. Mitchell, Mr. Curtis and Mr. Keller. I explained the purpose of the inspection was to evaluate compliance with the Clean Air Act and that we would be primarily focused on conducting surface emission monitoring. Inspector Rapp explained that we had two instruments with us, the TVA 2020¹ and the IRwin SX², which can be used to measure surface concentrations of methane and that we had calibrated and evaluated the precision and response time for both instruments that morning. We also notified the facility that we planned to take photos with a digital camera³ and that we brought a Forward Looking Infrared (FLIR) Camera⁴ capable of visually monitoring methane. I

¹ Thermo Fisher Scientific Model TVA 2020, Serial Number 202023127089

² Inficon IRwin SX device, using Elkins Earthworks software, held by EPA OECA/AED, Serial #: 580-01092006439

³ Olympus Tough TG-6, Serial Number BJ5B27623

⁴ Teledyne FLIR GF77

explained that all measurements, photos, video, and other information collected during the inspection would be included in the inspection report. I also explained the timeline of the inspection and set expectations that we would be asking questions of the facility staff as we conducted the inspection.

During the opening conference Inspector Rapp asked about the type of cover over the active area of the landfill. Mr. Curtis and Mr. Keller explained that active areas are under intermediate cover and the materials as described in their solid waste permit as consisting of materials such as "Alternative Daily Cover" mixed with soil, and/or an autofluff and soil mixture.

I asked the facility to describe how waste quantities are documented. Mr. Keller said that trucks are weighed when they come into the facility. He said that the truck weight, truck number, truck company, Waste Connections account number, and the special waste number (if applicable) are recorded. He said the special waste number is recorded only if the truck brings in special waste types, such as asbestos waste.

Inspector Rapp asked about their surface emission monitoring. Mr. Curtis explained that he began conducting surface emissions monitoring for Wasco Landfill in November 2023. He uses an IRwin to conduct the surface emissions monitoring and a map of the route is created prior to each monitoring event. Mr. Curtis explained that he does his best to cover all areas of the landfill by following a 25-foot grid SEM path, created by proSEM Topo. He said he does not monitor off of the grid and he avoids any areas that are within 250 feet of equipment, including trash filled trucks on the haul road, or within 250 feet of slopes below areas where waste is being placed. Mr. Curtis specifically mentioned that he monitors each well and all of the ground probes and the laterals. Mr. Curtis mentioned that the last quarterly survey lasted 4 days and covered 39 miles.

Mr. Curtis explained that when he conducts SEM, he holds the probe 3-4 in above the landfill surface (7-10cm). Mr. Curtis said the data from the IRwin is recorded and mapped with software on the tablet linked to the IRwin. Inspector Rapp asked who is responsible for the response if an elevated methane concentration is found during the SEM. Mr. Curtis said that when he monitors surface emissions above 500 parts per million ("ppm") "hits," he notifies the District Manager and SCS, their consultant, as well as the company engineers. Mr. Curtis explained that he calibrates the morning before he walks the SEM route. He said when he is finished with the SEM he reviews the data from the IRwin before it is sent to SCS to be included into the Quarterly Monitoring Report.

Mr. Curtis said he is also responsible for well monitoring. He explained that the landfill has a few wells in Cell 3B that have elevated temperatures. He also stated that, for those wells, he monitors twice per week and includes measurements of "everything," including methane, temperature, and pressure. If the temperature in a well is greater than 145 degrees Fahrenheit, the facility collects a sample of landfill gas from that well in a Summa canister. The data he collects is sent to SCS who advises the facility on how to proceed.

The inspectors asked the facility representatives to describe recent gas collection system activities at the site. The representatives explained that there had been significant construction

at the landfill which has resulted in a total of 37 vertical wells currently installed. Mr. Curtis said vertical wells are drilled to a depth of 250 feet or less. He mentioned that ten of the 37 installed wells had been installed since the end of last year (2023) and estimated that the facility had recently installed six additional collection wells (37 total wells). He also stated that since the end of 2023 the landfill has been and is currently installing lateral/horizontal wells in active areas. The representatives explained that the leachate collection system is not vented through the landfill gas collection system.

Mr. Rapp asked if the facility had a subsurface monitoring system. The facility representatives said that the site had had four subsurface monitoring in place, identified as GP-2 through GP-5. The facility's consultant, SCS, conducts quarterly monitoring of the subsurface migration probes.

Inspector Skeens asked the facility representatives to describe how asbestos waste is handled at the site. Inspector Skeens asked if Wasco had a designated asbestos cell or buried asbestos containing waste ("ACW") in place at the active cell. Ms. Mitchell stated that Wasco does not have a dedicated asbestos cell and buries in place. Ms. Mitchell explained that locations where asbestos waste is placed are documented and marked on a map. Inspector Skeens requested the ten most recent ASM-4 forms for commercial loads. Inspector Skeens asked what percentage of ACW is from the public vs commercial customers. Ms. Mitchell said she approximately 5% of ACW was from the public. Wasco will refer the public to the ODEQ website when they receive questions about asbestos drop-off to help ensure the public is aware of the regulations.

Inspector Skeens asked for Ms. Mitchell to describe the drop-off procedure for ACW. Ms. Mitchell stated that ACW is only received between 8:00 and 14:00 and a 24-hour notice is required. Ms. Mitchell stated that each asbestos drop-off will have a waste identification number that must be provided at the weight station. She said the drop-off is tagged with a GPS tracker which is then associated to the waste identification number and each load is given an approval number after inspection by a facility representative. Ms. Mitchell said employees involved in receiving the asbestos waste are required to take the 5-day initial asbestos training and annual refresher training in order to be able to identify discrepancies with the load and the provided ASN-4 form. She explained that Oregon regulations require asbestos loads to use an ASN-4 form which is similar to asbestos NESHAP waste shipment record.

The opening conference concluded at approximately 13:30.

VII. Facility Walk-Through

A digital photo log is included as Attachment 1 to this report. A map of the Surface Emissions Monitoring (SEM) path walked by Inspector Rapp with the EPA IRwin is included in Attachment 2.

At approximately 13:30, EPA preformed a "bump-check" on the TVA 2020 and on the EPA IRwin using the 500 ppm methane calibration gas. The TVA 2020 measured 488 ppm and the IRwin

measured 490 ppm methane, all readings were within 10% of the known calibration value. The inspectors had conducted successful precision and response time checks earlier that day in Portland, OR. See Attachments 4 and 5. The walkthrough began at about 13:40. The inspection team was escorted by Mr. Curtis and Mr. Keller. We followed the facility representatives in our vehicle to the flare station where we parked our vehicles and began the monitoring with the TVA 2020 operated by inspector Skeens and the IRwin operated by Inspector Rapp. Mr. Curtis monitored with the facility's IRwin.

A. Flaring Station

The flaring station can be seen in the background of photo P6200137. Inspector Rapp monitored the valves and flanges around the flare station and the IRwin detected one point with methane concentration readings over 500 ppm at a flange holding the "Triac control" shown in photo P6200136. Inspector Rapp recorded this reading in the IRwin⁵ as "A1". Inspector Rapp recorded readings on the northwest and southeast side of the flange between 400 ppm to 1540 ppm. See Attachment 1.

Mr. Keller explained the flare was installed and stated operating on the Thursday prior to our inspection, June 13th, and had been operated non-stop since Friday June 14th. Prior to starting the new flare in June 13th the landfill collection system had been turned off. The facility said ODEQ was made aware of the system downtime. I noticed a strong landfill odor at the location of the header leading to the flare, but we did not measure an additional reading over 500 ppm at the header.

B. Northwest-facing side of Phase IV

We proceeded up the northwest-facing slope of Phase IV at 14:09. Inspector Rapp measured an exceedance at a lateral valve cover and recorded in the EPA IRwin as "A2." See Attachment 1 and photograph P62000137. The lateral valve cover is a black tube made of corrugated piping that penetrates the landfill surface, the tube has a lid that fits snugly over the end of the corrugated pipe/tube. Mr. Curtis and Mr. Keller explained that there are valves under the covers that connect the lateral piping for branches of wells located up the slope to the header pipe. The header pipe is buried under the surface and the valves that connect the lateral pipe to the header are also below the surface. The lateral valve covers provide access to these valves.

We walked from one lateral valve cover to the next as we made our way along the slope to monitor the gas collection wells. Along this path we measured two exceedances at points on the surface, recorded in the EPA IRwin as "A3" photo P6200138 and P6200139 and "A4" (photos P6200140 and P6200141). We walked to another lateral valve cover and measured

methane concentrations between 37,000 ppm and 50,000 ppm methane, recorded in the EPA IRwin as "A5", exceedance at the top of the valve cover of LAT E2. The top of the valve cover at point A5 is shown in photos P6200142 and P6200143. See Attachment 1.

The inspectors walked along the path to the next valve cover labeled, LAT C2, and measured methane concentrations of 800 ppm to 1,000 ppm methane, recorded in the EPA IRwin as "A6." See photo P6200144. As we walked to the next valve cover labeled, LAT A1, we monitored along the surface and monitored concentrations greater than 500 ppm methane around the base, recorded in the EPA IRwin as "A7." See photo P6200145. We also monitored concentrations of methane greater than 500 ppm at the top of the cover, recorded in the EPA IRwin as "A8" and "A9." See Attachment 1.⁶

From LAT A1 we headed up the slope of the landfill and monitored for surface emissions as we walked from well to well heading South and West along the upper portion of the landfill slope. The inspectors observed an open trench related to the collection system construction activities and inspector Rapp monitored an exceedance of 500 ppm methane in the trench and recorded it in the EPA Irwin as "A10" and See photograph P6200147. Inspector Rapp monitored the suction side of wellhead V003 and detected methane concentrations greater than 500 ppm, recorded in the EPA IRwin as "A11." As EPA continued, we found an additional methane concentration greater than 500 ppm at the top of a pipe located between V0013 and V0016 and recorded it in the EPA IRwin as "A12." See Attachment 1.

Inspector Rapp noted in his inspection notebook that the gas technician, Mr. Curtis, had asked why he monitored at each location for so long and Inspector Rapp explained that, if an increased meter reading is observed, Method 21 requires the probe inlet be left at the maximum reading location for approximately two times the instrument response time. Mr. Curtis said that he did not know that and appreciated the information.

C. North end of East-facing side of Phase I

We followed the facility representatives in our vehicle to the north end of Phase I where we parked and started walking up the east-facing side of the phase at 15:39. We monitored as we walked through neck-high grass, ~4 feet, toward one of the 12-foot vents installed in this section. Neither the IRwin nor the TVA 2020 measured methane concentrations over 500 ppm along the path although, the surface was densely covered with vegetation and the probes could not be held close to the surface as we walked. Inspector Rapp placed the probe of the IRwin at the outlet of the valve and the highest measured reading was 158 ppm methane. We walked

⁶ Points A8 and A9 were both recorded in my notebook but they represent the same location and are recorded as one exceedance in the list of exceedances from our inspection.

back down the side of the cell back to our vehicle to meet with the facility representatives for the closing conference.

D. Asbestos

Inspector Skeens did not observe asbestos burial due to Wasco's practice of burring ACWM in the active cells. Inspectors did not go to the active cell due to safety concerns.

VIII. Closing Conference

At approximately 16:09, our group of EPA inspectors and facility representatives returned to the facility conference room to discuss the inspection and conduct the closing conference. I led the closing conference and summarized the areas of the landfill we had visited during the inspection and our observations related to CAA. I went through my inspection notes and described potential compliance concerns from the inspection. The following were identified as potential compliance concerns during the closing conference:

1. Leaking flange at the flare station. We noted the elevated methane reading at the flare station. The facility representatives told us that they would fix the leak the following day, Friday, and retest that location on Monday. They also stated that they had ordered another gasket.
2. Surface methane concentrations greater than 500 ppm. The inspectors noted that EPA had monitored and recorded several surface methane concentrations greater than 500 ppm. (Facility addressed in post-inspection email, see IX.C)
3. Elevated methane concentrations at the valve covers. The inspectors and facility representatives discussed the need to understand why gas is building up in those locations. The facility representatives mentioned that they wanted to find a permanent solution to this issue.

During the closing conference I listed the records that I wanted to see and told Nancy Mitchell I would send her an email detailing the specific records as well. I told Nancy Mitchell that EPA would provide the list of surface emission exceedance points as soon as possible and that the timeline for corrective action and re-monitoring would start once they received those SEM points. I explained that the inspection would not be complete until I have reviewed all the records that the facility submitted, reviewed my notes, and written an inspection report. Inspectors Rapp, Skeens, and I thanked the facility representatives and departed the facility at approximately 16:30.

IX. Post Inspection Activities

A. Records Review

The facility provided a response to our information request on July 18, 2024.

On 06/27/2024, EPA requested records via e-mail (Attachment 4). The email address was not correct for Nancy Mitchell and EPA followed up with a second request on 07/10/2024. At that time I asked for additional records related to the recent modifications at the facility. The list of the requested records is in Table 1. Below is a summary of the records received from the facility, with my response for each record.

Table 1: Records Review

Records Requested

Electronic copy of a map or maps: • Including the locations of all wells and an indication of the well type. • Indicating the cell outlines on the landfill. • Indicating the boundaries of each phase of the landfill. • Indicating the most recent planned path for surface emission monitoring, including areas excluded from monitoring.
Response: The facility provided all of the requested maps in an electronic format.
The most recent two quarters of gas migration/perimeter probe readings.
Response: Waste Connections provided readings taken on 4/22/2024 and 2/5/2024. The permitter probe readings recorded for the last two quarters were less than 1% methane.
Electronic copy of the most recent design plan.
Response: The facility did not provide the most recent design plan.
10 most recent ASN-4 for commercial loads.
Response: The facility provided 10 ASN-4 for drop-offs on July 10 th . The were no discrepancies listed in these notices. All fields were filled in excluding the Agent name for Transport #1 for 9 of the notices. The Agent did provide a signature in for this section of the form.

Last 6 months of landfill cover monitoring records.
Response: The facility provided records for each week from January 2 through July 13. Many of the records document the cover activity from each day in this period. There is some detail regarding the location where cover was placed as well as the type of cover and the reason for placing cover. The records do not clearly indicate that the cover was inspected or if there were repairs identified.
Last three months of all well readings “e-tools”, including all parameters measured. Please provide in an excel readable file type.
Response: The facility provided the requested data. The data for the vertical wells included in the facility maps was consistent with the information in the semi-annual reports.
Odor complaints received in the last 6 months.
Response: The facility provided records covering January through June 2024, all months had at least one complaint about odor except May 2024.
Electronic copy of the two most recent semi-annual (or annual) reports.
Response: The facility provided the two most recent semi-annual reports.
2 most recent quarterly surface emission monitoring surveys
Response: Facility provided both of the reports we requested. Q2 SEM – The report states that the monitoring probe was held 2 inches from surface. In the opening conference Mr. Curtis stated he holds the probe 3-4 inches from the surface. The map of the path taken shows that SEM covers Phase I and Phase III and Phase IV. Q1 SEM - The map of the and the table coordinates do not match.

B. Potential compliance concerns

After reviewing the facilities responses, NESHAP and CAA permits, I have the following potential compliance concerns:

1. The SEM reports indicate that monitoring is conducted in all three phases of the landfill but vegetation in some areas was too dense for Method 21-compliant surface emission monitoring in some areas, especially those with tall grasses.
2. Cover monitoring records don't clearly indicate that the cover was inspected or if there were repairs identified.

C. Facility actions after the June 20, 2024 inspection

The facility sent in a summary of actions taken after the June 20, 2024 inspection on July 17, 2024. The facility reported that the 10-day re-monitoring indicated all locations had methane emissions below the 500 ppm exceedance threshold except one point, A5. The facility included photos of all repairs, calibration records, and Irwin measurement records. They re-monitored A5 after 20 days and the reading was below the exceedance threshold, 500 ppm. The table below describes the corrective actions taken at each of the initial exceedance locations.

Table 2: Facility-reported repairs made at SEM exceedance points

Penetration	Time of repair	Description
A1	6/24/2024	Took apart and resealed and then tested again.
A2	7/16/2024	Added dirt around pipe/area/track walked
A3	7/16/2024	Added dirt around pipe/area/track walked
A4	7/16/2024	Added dirt around pipe/area/track walked
A5	7/16/2024	Turned up closest well to pull harder on gas around area/re seated lid
A6	7/16/2024	Turned up closest well to pull harder on gas around area/re seated lid
A7	7/16/2024	Added dirt around pipe/area/track walked
A8	7/16/2024	Turned up closest well to pull harder on gas around area/re seated lid
A9	7/16/2024	Turned up closest well to pull harder on gas around area/re seated lid
A10	7/16/2024	Filled in trench with dirt
A11	7/16/2024	Added dirt around pipe/area/track walked
A12	7/16/2024	Removed pipe and added dirt in the area

Attachment 1: EPA Digital Images and Surface Emission Exceedances

PENETRATION ID	TIMESTAMP (EST)	Corrected time (Pacific time)	MAX DETECTOR CONCENTRATION CH4 (ppmv)	EPA TVA confirmation reading CH4 (ppmv)	LAT WGS84	LON WGS84	Description	Photo number	
N/A		6/20/2024 9:44					Facility entrance	P6200135	
A1	6/20/2024 17:05	6/20/2024 14:05	690	1.39%	45.566319	-121.140278	flange at flare station	P6200136	
A2	6/20/2024 17:17	6/20/2024 14:17	852	1500	45.566295	-121.139911	HRRW1	P6200137	
A3	6/20/2024 17:23	6/20/2024 14:23	5313	1400	45.566255	-121.139846	0.2% reading by Waste Connection. Leak at location of waste penetrating soil.	P6200138, P6200139	
A4	6/20/2024 17:26	6/20/2024 14:26	902		45.566373	-121.139518	Leak in the surface area.	P6200140, P6200141 marker near A4	
A5	6/20/2024 17:32	6/20/2024 14:32	37526	5%	45.566426	-121.139268	LAT E2 top of valve cover.	P6200142, P6200143	
A6	6/20/2024 17:49	6/20/2024 14:49	877	1000	45.5669	-121.137897	LAT C2 top of valve cover.	P6200144	
A7	6/20/2024 17:53	6/20/2024 14:53	3856		45.567419	-121.136464	Ground level of LAT A1	P6200145	
A8	6/20/2024 17:55	6/20/2024 14:55	60218	3200	45.567418	-121.136443	LAT A1 top of valve cover.	P6200145	
A9	6/20/2024 17:54	6/20/2024 14:54	86000		45.56742	-121.136451	LAT A1		
							V028 and side of open trench down the slope from V028.	P6200146	
A10	6/20/2024 18:10	6/20/2024 15:10	1651		45.566396	-121.136598	Open trench and V029. Leak is at the trench.	P6200147	
A11	6/20/2024 18:15	6/20/2024 15:15	1170	1132	45.566228	-121.137261	On suction side of V003.	P6200148	
A12	6/20/2024 18:32	6/20/2024 15:32	907	980	45.565132	-121.140345	Top of valve cover.		
							Phase I, north side	P6200149	
							Passive vent pipe on north side of Phase I	P6200150	

Attachment 2: EPA Surface Emission Monitoring Map

June 20, 2024

SEM exceedances ●

Legend

● Path



WASCO COUNTY LANDFILL

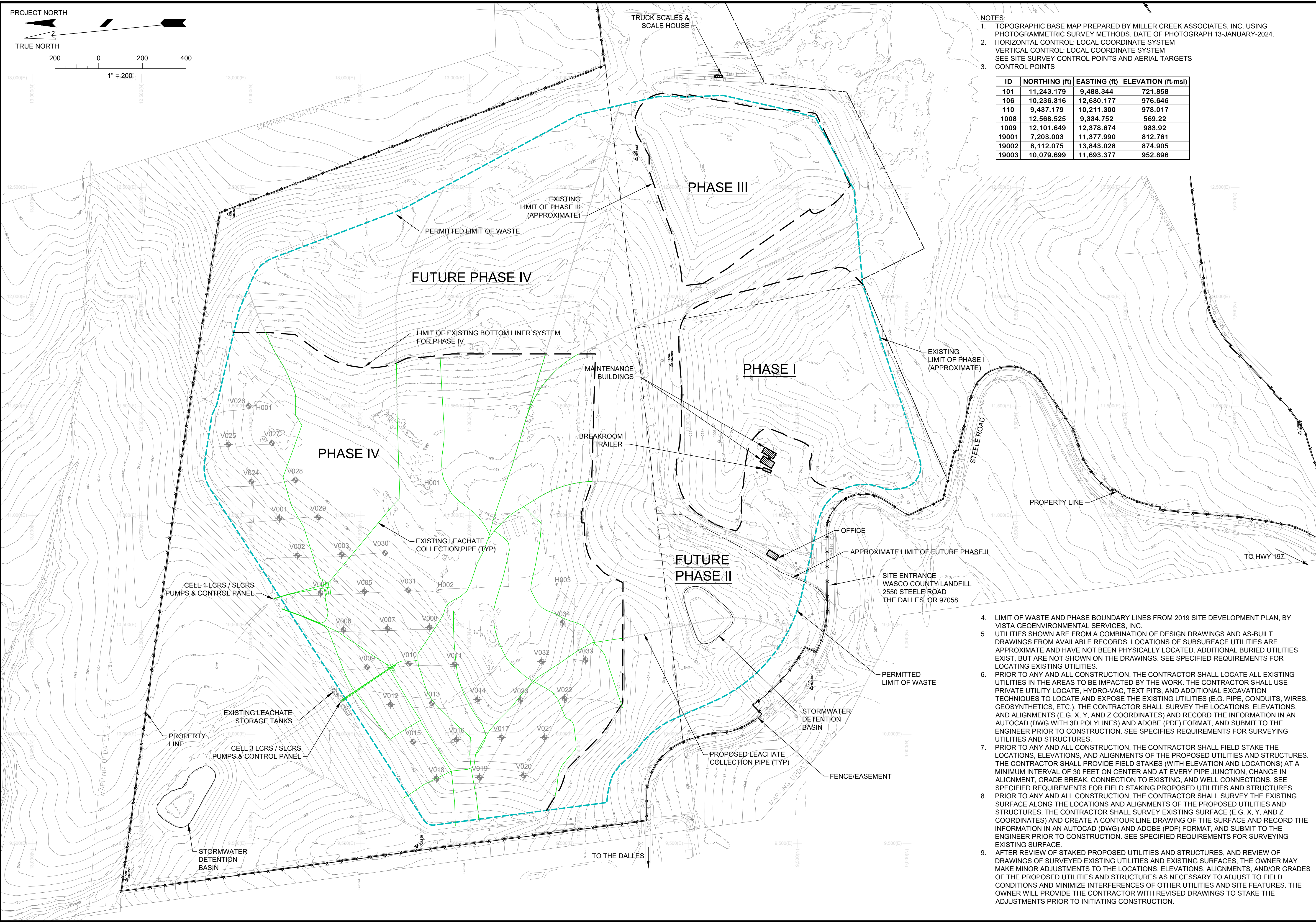
Google Earth

Image © 2024 Airbus



1000 ft

Attachment 3: Facility Map with Phases and Wells



NOTES:

- TOPOGRAPHIC BASE MAP PREPARED BY MILLER CREEK ASSOCIATES, INC. USING PHOTOGRAMMETRIC SURVEY METHODS. DATE OF PHOTOGRAPH 13-JANUARY-2024.
- HORIZONTAL CONTROL: LOCAL COORDINATE SYSTEM
VERTICAL CONTROL: LOCAL COORDINATE SYSTEM
SEE SITE SURVEY CONTROL POINTS AND AERIAL TARGETS
CONTROL POINTS

ID	NORTHING (ft)	EASTING (ft)	ELEVATION (ft-msl)
101	11,243.179	9,488.344	721.858
106	10,236.316	12,630.177	976.646
110	9,437.179	10,211.300	978.017
1008	12,568.525	9,334.752	569.22
1009	12,101.649	12,378.674	983.92
19001	7,203.003	11,377.990	812.761
19002	8,112.075	13,843.028	874.905
19003	10,079.699	11,693.377	952.896

- LIMIT OF WASTE AND PHASE BOUNDARY LINES FROM 2019 SITE DEVELOPMENT PLAN, BY VISTA GEOENVIRONMENTAL SERVICES, INC.
- UTILITIES SHOWN ARE FROM A COMBINATION OF DESIGN DRAWINGS AND AS-BUILT DRAWINGS FROM AVAILABLE RECORDS. LOCATIONS OF SUBSURFACE UTILITIES ARE APPROXIMATE AND HAVE NOT BEEN PHYSICALLY LOCATED. ADDITIONAL BURIED UTILITIES EXIST, BUT ARE NOT SHOWN ON THE DRAWINGS. SEE SPECIFIED REQUIREMENTS FOR LOCATING EXISTING UTILITIES.
- PRIOR TO ANY AND ALL CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN THE AREAS TO BE IMPACTED BY THE WORK. THE CONTRACTOR SHALL USE PRIVATE UTILITY LOCATE, HYDRO-VAC, TEXT PITS, AND ADDITIONAL EXCAVATION TECHNIQUES TO LOCATE AND EXPOSE THE EXISTING UTILITIES (E.G. PIPE, CONDUITS, WIRES, GEOSYNTHETICS, ETC.). THE CONTRACTOR SHALL SURVEY THE LOCATIONS, ELEVATIONS, AND ALIGNMENTS (E.G. X, Y, AND Z COORDINATES) AND RECORD THE INFORMATION IN AN AUTOCAD (DWG WITH 3D POLYLINES) AND ADOBE (PDF) FORMAT, AND SUBMIT TO THE ENGINEER PRIOR TO CONSTRUCTION. SEE SPECIFIES REQUIREMENTS FOR SURVEYING UTILITIES AND STRUCTURES.
- PRIOR TO ANY AND ALL CONSTRUCTION, THE CONTRACTOR SHALL FIELD STAKE THE LOCATIONS, ELEVATIONS, AND ALIGNMENTS OF THE PROPOSED UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL PROVIDE FIELD STAKES (WITH ELEVATION AND LOCATIONS) AT A MINIMUM INTERVAL OF 30 FEET ON CENTER AND AT EVERY PIPE JUNCTION, CHANGE IN ALIGNMENT, GRADE BREAK, CONNECTION TO EXISTING, AND WELL CONNECTIONS. SEE SPECIFIED REQUIREMENTS FOR FIELD STAKING PROPOSED UTILITIES AND STRUCTURES.
- PRIOR TO ANY AND ALL CONSTRUCTION, THE CONTRACTOR SHALL SURVEY THE EXISTING SURFACE ALONG THE LOCATIONS AND ALIGNMENTS OF THE PROPOSED UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL SURVEY EXISTING SURFACE (E.G. X, Y, AND Z COORDINATES) AND CREATE A CONTOUR LINE DRAWING OF THE SURFACE AND RECORD THE INFORMATION IN AN AUTOCAD (DWG) AND ADOBE (PDF) FORMAT, AND SUBMIT TO THE ENGINEER PRIOR TO CONSTRUCTION. SEE SPECIFIED REQUIREMENTS FOR SURVEYING EXISTING SURFACE.
- AFTER REVIEW OF STAKED PROPOSED UTILITIES AND STRUCTURES, AND REVIEW OF DRAWINGS OF SURVEYED EXISTING UTILITIES AND EXISTING SURFACES, THE OWNER MAY MAKE MINOR ADJUSTMENTS TO THE LOCATIONS, ELEVATIONS, ALIGNMENTS, AND/OR GRADES OF THE PROPOSED UTILITIES AND STRUCTURES AS NECESSARY TO ADJUST TO FIELD CONDITIONS AND MINIMIZE INTERFERENCES OF OTHER UTILITIES AND SITE FEATURES. THE OWNER WILL PROVIDE THE CONTRACTOR WITH REVISED DRAWINGS TO STAKE THE ADJUSTMENTS PRIOR TO INITIATING CONSTRUCTION.

REGISTERED PROFESSIONAL ENGINEER
8873
OREGON
JOHN M. RICHMOND
4-9-24
RENEWAL DATE: 12-31-2024

DATE
03/29/2024
04/09/2024

REVISION
ISSUED FOR REVIEW
ISSUED FOR CONSTRUCTION

NO.
A
B
C
D

EXISTING SITE PLAN
PROJECT TITLE
2024 LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION
WASCO COUNTY LANDFILL
THE DALLES, OREGON

WASTE CONNECTIONS INC.
Connect with the future®

SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (503) 684-6948

PROJ. NO. 04224013.00
DWN. BY: GDB
CHK. BY: TAM
APP. BY: JMR

DATE:
APRIL 2024

SCALE:
AS SHOWN

DRAWING NO.
G3

Attachment 4: IRwin Calibration

Appendix __: Instrument & Calibration Data for the Irwin SX

The survey was conducted by Steve Rapp, Environmental Engineer, U.S. EPA, using an Inficon IRwin SX device, using the Elkins Earthworks software, held by EPA OECA/AED, Serial #: 580-01092006439. Mr. Rapp calibrated the instrument according to Method 21 and manufacturer instructions with 0 ppm (“zero gas”) and 500 ppm methane. He conducted bump check calibrations before and after each survey.

Steve Rapp calibrated the Irwin device and checked for response time and precision on June 20, 2024, at 6:50 a.m. at the Portland-area hotel he was stationed at for this inspection, using the 0 ppm (“zero air”) and 500 ppm methane from the same cylinders as during the inspection. Demand regulators were used and all measurements were taken through the full length of sample line tubing used to monitor in the field. All readings were within 10% of the known calibration value. Response times were approximately 6.7 to 7.6 seconds, under the maximum of 30 seconds.

Response Time and Precision Check: EPA OECA/AED IRwin

Trial	Calibration Gas ppm	Reading (ppm)	Time (s)
1	500	500	6.78
2	500	500	6.92
3	500	500	7.59
Average		500	7.1

The calibration gases listed below were used during the response time and precision checks on June 20, 2024, and during the inspection for the initial calibration and bump checks on June 20, 2024.

Calibration Gas

Composition	Manufacturer	Lot Number	Expiration Date
Zero air <1 ppm total hydrocarbon	Pine Environmental Services	304-402786171-1	6/29/2027
500 ppm methane in air	Pine Environmental Services	304-402785850-1	6/29/2027

On June 20, 2024, all pre-survey calibration checks showed successful calibration. All post-survey bump check showed successful calibration but with slight (2%) downward drift, possibly resulting in false negatives (i.e., missed exceedances) and potential underestimation of the severity of measured exceedances. Demand regulators were used and all measurements were taken through the full length of sample line tubing used to monitor in the field.

Calibration Checks

Date/Time	Gas Concentration (ppm)	IRwin Reading (ppm)
6/20/2024 / 13:44	500	490
6/20/2024 / 14:26	500	560

Attachment 5: TVA 2020 Calibration

EPA Method 21 Quarterly Precision/Daily Calibration Form

US EPA, Region 10	Monitor: <u>Sara Conley</u>	Date: <u>06/20/24</u>
Mfg: Thermo Fisher Scientific	Model No: <u>TVA 2020</u>	Instrument SN: <u>A3A4B2</u>
Facility: <u>Portland Hotel</u>	City/State: <u>Portland OR</u>	ICIS No.

2020312708

Calibration Gas Information					
	Gas Type	ppm	+ / - %*	Lot No:	Expiration Date: (M-D-Y)
Calibration Gas 1	O-Air	0	290	304-402786171-1	6/29/27
Calibration Gas 2	CH ₄	500		304 402785850-1	6/29/27
Calibration Gas 3	10.000	10 000		304402785849-1	06/29/27

* % that gas is certified to be w/in of the std concentration. (Method-21, Cylinder gas to be certified within $\pm 2\%$ of std.)

Calibration Standard Test No. 1: <u>0</u> PPM <u>Zero Air</u> Gas						
Test	Test reading	Drift	Total	Avg.	-----	Comments
1	<u>-0.6</u>		<u>-1.9</u>	<u>-0.63</u>		
2	<u>-0.6</u>				<u>NA</u>	
3	<u>-0.6</u>					
<u>-0.7</u>						
Calibration Standard Test No. 2 <u>500</u> PPM <u>CH₄</u> Gas						
Test	Test reading	Drift	Total	Avg.	*Avg diff w/in $\pm 10\%$ std = Pass	Comments
1	<u>503</u>	<u>2.3</u>				
2	<u>491</u>	<u>4</u>	<u>487</u>	<u>495.67</u>	<u>0.9</u> %	<u>Pass</u> Fail
3	<u>493</u>	<u>2.67</u>	<u>13.77</u>	<u>4.66</u>		
						(circle one)
Calibration Standard Test No. 3 _____ PPM _____ Gas						
Test	Reading	Drift	Total	Avg.	*Avg diff w/in $\pm 10\%$ std = Pass	Comments
1						
2						
3						
						(circle one)

* Avg difference $\div$ cal gas std $\times 100 =$ _____ %, Unit warm up time $\geq$ 30 min: ☐ Yes, ☐ No

Subpart VVa Drift – Mid Day Reading				Subpart VVa Drift – End of Day Reading			
Cal Gas	Concentration	Reading	*Pass / Fail	Cal Gas	Concentration	Reading	*Pass / Fail
1				1			
2				2			
3				3			

*Negative drift $> 10\%$ = Fail per 40 CFR 60, Subpart VVa. Fail = monitored data is void. Pass = $\leq 10\%$ drift.

Response Time W/ extension ☒ W/O extension ☐										
Test No.	Cal Std	Response Time	Total Time	Avg. Time	pass/fail ≤ 30 sec	Cal Std.	Response Time	Total Time	Avg. Time	pass/fail ≤ 30 sec
1	<u>503</u>	<u>6.24</u>								
2	<u>491</u>	<u>5.63</u>	<u>17.40</u> sec	<u>5.88</u> sec	<u>Pass</u> / Fail					Pass / Fail
3	<u>493</u>	<u>5.79</u>								

Notes: _____

Monitor's Signature

Sara Conley

Date: 06/20/24